IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF TEXAS

MARSHALL DIVISION

KAIST IP US LLC, PLAINTIFF	)(	CASE NO. 2:16-CV-1314-JRG-RSP
VS.	)(	
SAMSUNG ELECTRONICS CO., LTD; SAMSUNG ELECTRONICS AMERICA, INC.; SAMSUNG SEMICONDUCTOR, INC; SAMSUNG AUSTIN SEMICONDUCTOR, LLC;, GLOBALFOUNDRIES, INC.; GLOBALFOUNDRIES U.S., INC.; AND QUALCOMM, INC., DEFENDANTS	)(	MARSHALL, TEXAS
	)(	JUNE 11, 2018
	)(	1:35 P.M.

TRIAL TRANSCRIPT OF JURY TRIAL

BEFORE THE HONORABLE JUDGE RODNEY GILSTRAP

UNITED STATES CHIEF DISTRICT JUDGE

APPEARANCES:

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(Proceedings recorded by mechanical stenography, transcript produced on a CAT system.)

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P R O C E E D I N G S

(Jury out.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

Do I understand, counsel, both translators have been sworn in?

MR. SHEASBY: Yes, Your Honor.

THE COURT: Okay. Who's going to present the opening statement for Plaintiff?

MR. SHEASBY: Your Honor, I will.

THE COURT: All right. And for Defendants?

MR. JACOBS: Your Honor, I'll be doing that.

THE COURT: All right. Counsel, are you aware of anything we need to take up before I bring in the jury and begin with my preliminary instructions?

MR. SHEASBY: Nothing from the Plaintiffs, Your Honor.

MR. JACOBS: Not on behalf of the Defendants, Your Honor.

THE COURT: All right. Mr. Elliott, bring in the jury, please.

COURT SECURITY OFFICER: Rise for the jury.

(Jury in.)

THE COURT: Please be seated.

Welcome back from lunch, ladies and gentlemen. We're going to try to keep the case moving, and try to hold to the schedule I talked about with you during jury selection.

Before you're addressed with opening statements by counsel for the parties, I have some preliminary instructions to go over with you.

You've now been sworn as the jurors in this case. And as the jury, you are the sole judges of the facts, and as such, you will decide and determine what all the facts are in this case.

As the judge, I will give you instructions on the law, I'll decide questions of law that arise during the course of the trial, and I'll handle any matters related to evidence and procedure. I'll also manage the flow of the evidence and maintain the decorum of the courtroom.

At the end of the evidence in this case, I'll give you detailed instructions about the law to apply in deciding this case, and I will then give you a list of questions that you are to answer. This list of questions is called the verdict form. Your answers to those questions will need to be unanimous, and those answers to those questions will constitute the jury's verdict in this case.

Now, I briefly want to tell you what this case is about. As you know, this involves a dispute regarding a certain United States patent. As I know, you saw in the patent video this morning that there are certain facts about the process of obtaining a patent. I want to give you some instructions here now on the record about a patent and how one is obtained.

Patents are granted or denied by the United States Patent and Trademark Office, which you will often hear referred to throughout the trial simply as the PTO.

The United States Congress has authorized the Patent and Trademark Office to grant patents to both American citizens and foreign citizens.

A valid United States patent gives the patentholder the right for up to 20 years from the date the patent application is filed to prevent others from making, using, offering to sell, or selling the patented invention within the United States or importing it into the United States

without the patentholder's permission.

A patent is a form of property. It's called intellectual property. And like other forms of property, a patent can be bought or sold. A violation of the patentholder's rights is called infringement. The patentholder may try to enforce a patent against persons it believes to be infringers by filing a lawsuit in federal court, and that's what we have in this case.

The process of obtaining a patent is called patent prosecution. To obtain a patent, one must first file an application with the PTO. The PTO is an agency of the United States government, and it employs trained examiners who review applications for patents.

The application includes within it what is called a specification. The specification contains a written description of the claimed invention, telling what the invention is, how it works, how to make it, and how to use it. The specification concludes or ends with one or more numbered sentences. These numbered sentences are the patent claims.

When a patent is granted by the PTO, it is the claims that define the boundaries of its protection and give notice to the public of those boundaries.

Patent claims may exist in two forms. They're known as independent claims and dependent claims.

An independent patent claim does not refer to any other claim in the patent. It's independent. It's not necessary to look at any other claim or claims to determine what an independent claim covers.

However, a dependent claim refers to at least one other claim in the patent. A dependent claim includes each of the limitations or elements of the other claim or claims to which it refers, or as we sometimes say, from which it depends, as well as the additional limitations or elements recited within the dependent claim itself.

Therefore, to determine what a dependent claim covers, it's necessary to look at both the dependent claim itself and the independent claim or claims from which it refers or as we say from which it depends.

The claims of the patent-in-suit use the word "comprising." Comprising means including or containing. A claim that includes the word "comprising" is not limited to the methods or devices having only the elements recited in the claim but also covers methods or devices that add additional elements.

Let me give you an example, if you take a claim that covers a table, if the claim recites a table comprising a tabletop, legs, and glue, the claim will cover any table that contains those structures, even if the table also contains other structures, such as leaves to go in the

tabletop or wheels to go on the ends of the legs.

Now, that's a simple example using the word "comprising" and what it means. But, in other words, ladies and gentlemen, it can have other features, in addition to those that are covered by the patent.

Now, after the applicant files the application with the PTO, an examiner is assigned and reviews the application to determine whether or not the claims are patentable; that is, to say whether they're appropriate for patent protection and whether or not the specification adequately describes the invention that's claimed.

In examining the patent application, the examiner reviews certain information about the state of the technology at the time the application was filed. The PTO searches for and reviews this type of information that's publicly available or was submitted with the application. This type of information is called prior art.

The examiner reviews the prior art to determine whether or not the invention was truly an advance over the state of the art at the time. Prior art is defined by law, and I'll give you more specific instructions at a later time as to what constitutes prior art, but, in general, prior art includes information that demonstrates the state of the technology that existed before the claimed invention was made or before the application for a patent was filed with

the PTO.

A patent also contains a list of certain prior art that the examiner has considered, and these items of prior art in this list are called the cited references.

Now, after the prior art search and the examination by the -- by the examiner, the examiner informs the applicant in writing of what the examiner has found and whether the examiner considers any claim to be patentable, in which case it would be allowed, and this writing from the examiner to the applicant is called an Office Action. However, if the examiner rejects the claims, the applicant has an opportunity to respond to the examiner to try to persuade the examiner to allow the claims. The applicant also has the chance to change or amend the claims or to submit new claims.

Now, these papers between the examiner and the applicant can go back and forth -- these communications can go back and forth between the examiner and the applicant for some time. These communications back and forth are called the prosecution history.

And as I say, this process may go on for some time until the examiner is satisfied that the application meets the requirements for a patent, and in that case, the application issues as a United States patent, or in the alternative, if the examiner ultimately concludes that the

application should be rejected, then no patent is issued.

Sometimes patents are issued after appeals within the PTO or to a Court.

Now, the fact, ladies and gentlemen, that the PTO grants a patent does not necessarily mean that any invention claimed in the patent, in fact, deserves the protection of a patent. While an issued United States patent is presumed to be valid under the law, a person accused of infringement has the right to argue in federal court that the claimed invention in a patent is invalid.

It's your job as the jury to consider the evidence presented by the parties and to determine independently and for yourselves whether or not the Defendant has proven that the patent is invalid.

Now, to help you follow the evidence, I'll give you a brief summary of the positions of the parties.

As you know, the party who brings a lawsuit is called the plaintiff. And the Plaintiff in this case is KAIST IP US LLC, which you'll simply hear referred to throughout the course of the trial for simplicity as either the Plaintiff or KAIST.

And as you know, the party against whom a lawsuit is brought is called the defendant. In this case, there are several defendants. The Defendants in this case include Samsung Electronics Company, Limited, Samsung Electronics

America, Inc., Samsung Semiconductor, Inc., Samsung Austin Semiconductor, LLC. All of these I will hear -- you will hear referred to throughout the trial from time to time collectively as Samsung or you may hear them referred to as the Samsung Defendants.

Additionally, there are Defendants in this case that include GlobalFoundries, Inc. And GlobalFoundries US, Inc. Likewise, throughout the course of the trial you may hear these two Defendants referred to collectively as either GlobalFoundries or as the GlobalFoundries Defendants.

In addition in this case, Qualcomm Inc., is a Defendant who you may hear referred to simply as Qualcomm.

And you will hear all seven of these Defendants referred to collectively throughout the case as the Defendants. When you hear the word "the Defendants," that means -- or the words "these Defendants" or "the Defendants," that means all seven of them. If they're broken down into these different groups, then you may hear about the Samsung Defendants, the GlobalFoundries Defendants, or Qualcomm. I hope that's helpful.

As I told you during the jury selection process, this case is one of alleged patent infringement. There is one patent at issue in this case -- that is, United States patent No. 6,885,055.

Now, it's common that patents are known by and

referred to by their last three digits, so in this case, the patent that is in this suit you'll often hear referred to over the course of the trial simply as the '055 patent. It may also be referred to at various times in the trial as the patent-in-suit or the asserted patent. And this patent generally relates to a system for communicating with external devices.

You'll have a complete copy of the '055 patent, the patent-in-suit, in your juror notebooks that are going to be passed out to you in a few minutes.

Now, the Plaintiff in this case, KAIST, contends that the seven Defendants are infringing certain claims of the patent-in-suit, the '055 patent, by making, using, selling, offering for sale, and/or importing products that included the -- that include the patented technology into the United States.

KAIST, the Plaintiff, contends that it's entitled to money damages as a result of this infringement. KAIST also contends that the Defendants' infringement is willful.

Now, the Defendants deny that they have infringed any of the claims of the patent-in-suit, and they contend that the asserted claims from the patent-in-suit are invalid. Defendants also contend that KAIST is not entitled to any money damages.

Now, I know, ladies and gentlemen, that there have

been a lot of new words and new concepts that have been thrown at you. I'm going to define a lot of those words and concepts for you as we go through these instructions.

The attorneys are going to discuss them in their opening statements.

The witnesses are also -- also going to help you with their testimony to understand these terms.

So, please, do not feel overwhelmed at this point. I promise you, it's going to all come together as we go through the trial.

Now, your job is to decide whether the asserted claims have been infringed and whether those asserted claims of the one patent-in-suit are invalid. If you decide that any claim of the patent-in-suit has been infringed by the Defendants and is not invalid, then you'll need to decide what amount of money damages should be awarded to the Plaintiff as compensation for that infringement.

Now, my job in the case is to tell you what the law is, to handle rulings on evidence and procedure, and to oversee the conduct of the trial. In determining the law, it is specifically my job to -- to determine the meaning of any language from the claims within the asserted patent that needs to be interpreted.

I've already determined the meanings of certain terms within the claims in the patent-in-suit, and you must

accept those meanings and those definitions that I give you, and you must use those constructions or definitions or meanings when you decide whether any particular claim has or has not been infringed, and whether or not any claim is invalid.

And you're going to be given a document as a part of these juror notebooks that reflects the terms from the asserted claims that the Court has already construed, and you're going to be given the definitions or constructions that the Court has adopted for each of those terms. You'll have those in your juror notebooks.

Now, for any language in the claims -- any term from the claims that I have not provided you with a definition for, you should apply the plain and ordinary meaning of that term.

However, if I've -- if I've supplied you with a definition, then you must apply my definition to those terms throughout the case. However, my interpretation of the language of the claims should not be taken by you as an indication that I have a personal opinion or any opinion regarding the issues such as infringement or invalidity, because those issues, ladies and gentlemen, are yours to decide and yours to decide alone.

I'll provide you with more detailed instructions regarding the meaning of the claims before you retire to

deliberate and return your verdict.

In deciding the issues that are before you, you'll be asked to consider specific legal rules. And I'll give you an overview of those rules now. And at the conclusion of the case, I'll give you much more detailed instructions.

The first issue that you'll be asked to decide is whether the Defendants have infringed any of the asserted claims of the '055 patent. Infringement is assessed on a claim-by-claim basis. And the Plaintiff, KAIST, must show by a preponderance of the evidence that a claim has been infringed.

Therefore, there can be infringement as to one claim but no infringement as to another claim.

There are also a few different ways that a patent can be infringed, and I'll explain the -- the requirements for these types of infringements to you in detail at the conclusion of the case.

But in general, a Defendant may infringe the asserted patent by making, using, selling, or offering for sale in the United States or importing into the United States a product meeting all of the requirements of the claim of the asserted patent.

And I'll provide you with more detailed instructions on the requirements for infringement, as I say, at the conclusion of the case.

Now, the second issue that you're going to be asked to decide is whether the asserted patent is invalid. Invalidity is a defense to infringement. Therefore, even though the PTO has allowed certain claims and even though a patent issued by the PTO is presumed to be valid, you, the jury, must decide whether those claims are invalid after hearing all the evidence as presented during this trial.

You may find a patent claim to be invalid for a number of reasons, including because it claims subject matter that is not new or because it is obvious.

For a patent to be invalid because it is not new, Defendants must show by clear and convincing evidence that all of the elements of a claim are sufficiently described in a single previous printed publication or patent. We call these items, again, prior art.

If a claim is not new, it is said to be anticipated by the prior art.

Another way that a claim can be found to be invalid is that it may have been obvious. Even though a claim is not anticipated because every element of the claim is not shown or sufficiently described in a single piece of prior art, the claim may still be invalid if it would have been obvious to a person of ordinary skill in the field of the technology of the patent at the relevant time.

Now, you'll need to consider a number of questions

in deciding whether the invention claimed in the asserted patent is obvious, and I'll provide you with more detailed instructions on those questions at the conclusion of the trial.

If you decide that any claim of the patent-in-suit has been infringed and is not invalid -- that is, the presumption of validity has survived -- then you'll need to decide what amount of money damages should be awarded to KAIST to compensate it for that infringement.

A damage award, ladies and gentlemen, must be adequate to compensate the patentholder for the infringement. And in no event may the damage award be less than the -- what the patentholder would have received had it been paid a reasonable royalty for the use of its patent.

However, the damages that you award, if any, are meant to compensate the patentholder and not to punish the Defendant, and you may not include in your award any additional amount as a fine or penalty above what is necessary to fully compensate the patentholder for the infringement.

Additionally, damages cannot be speculative, and the Plaintiff, KAIST, must prove the amount of its damages for the Defendants' alleged infringement by a preponderance of the evidence.

I'll give you more detailed instructions on the

calculation of damages at the conclusion of the trial, including giving you more specific instructions with regard to the calculation of a reasonable royalty.

Also, the fact that I'm giving you these instructions about damages does not mean that the Plaintiff is or is not entitled to recover damages.

Now, ladies and gentlemen, you're going to be hearing from a number of witnesses over the course of this trial. And I want you to keep an open mind while you're listening to the evidence and not decide any of the facts until you've heard all of the evidence.

This is important. While the witnesses are testifying, remember that you, the jury, will have to decide the degree of credibility and believability to allocate to the witnesses and the testimony that they give.

So while the witnesses are testifying, you should be asking yourselves questions like these: Does the witness impress you as being truthful? Does he or she have a reason not to tell the truth? Does he or she have any personal interest in the outcome of the case?

Does the witness appear to have a good memory? Did he or she have an opportunity and ability to observe accurately the things that they've testified about? Did the witness appear to understand the questions clearly and answer them directly? And, of course, does the witness's

testimony differ from the testimony of any other witnesses, and if it does, how does it differ.

These are some of the kinds of things that you should be thinking about while you're listening to the witnesses.

Again, you alone as the jury are determined -- are to determine the issues of credibility or truthfulness for the witnesses. And in weighing the testimony of the witnesses, you may consider the witness's manner and demeanor on the witness stand, any feelings or interest in the case, any prejudice or bias about the case that he or she may have.

And you may consider the consistency or inconsistency of their testimony considered in the light of the circumstances. Has the witness been contradicted by other credible evidence? Has she or -- has he or she made statements at other times and places contrary to the statements they make as a witness in this trial. These are some of the things you also should be considering.

You must give the testimony of each witness the credibility that you think it deserves. Even though they -- even though a witness may be a party to an action and, therefore, interested in its outcome, the testimony may be acceptable if it's not contradicted by direct effort -- evidence or by any -- or by any inference that may be drawn

from the evidence if you believe that testimony.

You're not to decide this case, ladies and gentlemen, by counting the number of witnesses who have testified on each of the sides. Witness testimony is to be weighed. Witnesses are not to be counted.

The test is not the relative number of witnesses but the relative convincing force of the evidence that each witness gives. In that vein, the testimony of a single witness is sufficient to prove any fact, even if a greater number of witnesses have testified to the contrary if after you consider all of the evidence you believe that single witness.

I also want to talk briefly to you about expert witnesses.

When knowledge of a technical subject may be helpful to you, the jury, a person who has special training and experience in that particular field, we call them an expert witness, is permitted to testify to you about his or her opinions on those technical matters.

However, you're not required to accept an expert or any other witness's opinions at all. It's up to you to decide whether you believe an expert witness or any witness for that matter, whether you believe they're correct or incorrect or whether or not you want to believe what they say.

Now, I anticipate that there will be expert witnesses testifying in support of each side in this case, but it will be up to you to listen to their qualifications when they're called to testify. And when they give you an opinion and explain the basis for it, you, the jury, will have to evaluate what they say, whether you believe it, and to what degree, if any, that you want to give it weight.

Remember, ladies and gentlemen, judging and evaluating the credibility and believability of each and every witness is an important part of your job as the jury.

Now, during the trial, it's possible that there will be testimony from one or more witnesses that are going to be presented to you through what's called a deposition. In trials like this, it's difficult, if not impossible, to get every witness physically here at the same time. So the lawyers for each side prior to the trial may take the depositions of the witnesses.

In a deposition, the court reporter -- a court reporter is present, the witness is present and sworn and placed under oath, just as if they were personally in court. And then the parties, through their lawyers, ask that witness questions, and the witness answers them, and those questions and answers are recorded by the court reporter. They're also often additionally videoed by a videographer. And we have those records.

Portions of those recordings and the -- of the questions and the answers can then be played back to you, as the jury, as a part of this trial so that you can see and hear the witness and their testimony even though they're not physically present in the courtroom.

That deposition testimony is entitled to the same consideration insofar as possible and is to be judged as to the credibility, weight, and otherwise considered by the jury in the same way as if the witness had physically appeared and been present and offered that testimony in open court.

Now, during the trial of this case, it's possible that the lawyers for one side or the other will make certain objections. And when they do, I'll make rulings on those objections.

It's the duty of an attorney for each side in the case to object when the other side offers testimony or other evidence that the attorney believes is not proper under the rules of the Court, the rules of procedure, and the rules of evidence.

Now, upon allowing the testimony or other evidence to be introduced over the objection of an attorney, the Court does not -- the Court does not, unless expressly stated, indicate any opinion as to the weight or effect of that evidence. As I've said, you, the jury, are the sole

judges of the credibility and the believability of all the witnesses and the weight and effect to give to all of the evidence.

Now, ladies and gentlemen, I want to compliment the parties in this case on both sides because prior to today, they have spent many hours with the Court going through literally hundreds of exhibits that might be used during the course of this trial. And all the arguments for and against the admissibility of those exhibits have been taken up by the Court at an earlier time through pre-trial proceedings that did not require you to be present. And that is done so that when you're empaneled as the jury and we proceed with the trial, we can save hours and hours of time so that those don't have to be presented initially in front of the jury, the Court hear the objections and the arguments, and eventually make rulings on the admissibility of those exhibits.

That means an awful lot of time has been saved that otherwise you would have to sit through as a part of this trial, and that's why I compliment the parties.

It also means that the exhibits in this case have been pre-admitted by the Court. And I've already ruled on the ultimate admissibility or inadmissibility of those exhibits.

So that means when an exhibit is shown to you over

the course of this trial, the Court's already addressed the admissibility of it. And counsel can simply present the exhibit, ask what questions they want to, to put it in the proper context -- context, and then present that evidence to you.

That has saved a lot of time for all of you. You may not realize it, but it's many, many hours that have been saved by going through that preadmission of the exhibits in advance of the trial.

However, even though that's been done, it's still possible that objections may arise during the course of the trial. If I should sustain an objection to a question addressed to a witness, then you, the jury, must disregard the question entirely, and you may draw no inference from its wording or speculate or guess about what the witness would have said if I had permitted them to answer the question.

On the other hand, if I overrule an objection addressed to a witness during the course of the trial, then you should consider the question and the answer just as if no objection had been made.

Now, you should understand, ladies and gentlemen, the law of the United States allows a United States District Judge to comment on the evidence, but that such comment is an expression of the judge's opinion only and may -- may be

disregarded in its entirety by the jury because, as I've said, you, the jury, are the sole judges of the facts, the credibility of the witnesses, and the weight to be given to the testimony.

Even though the law permits me to comment on the evidence in your presence, I -- as I've indicated earlier, are going to -- I'm going to try very hard not to do that. And I'll attempt to carry that throughout the course of the trial.

Also, in front of me is our court reporter, she takes down everything that's said in the courtroom by anybody. And it's reduced to writing in the form of a written transcript.

However, that written transcript is not going to be finished and prepared and available for your use when you retire to deliberate on your verdict in this case. And that means you're going to have to rely on your memory of the evidence that's presented over the course of the trial.

Now, in a moment, each of you are going to be given a juror notebook. In the back of that notebook, you're going to find a blank legal pad on which you can take notes if you wish to. You should also find in the front pocket of that notebook a pen that you can use to take notes, as well.

It's up to each of you to decide whether or not you want to take notes over the course of the trial. And if you

do, how detailed you want your notes to be. But remember, ladies and gentlemen, any notes that you take are for your own personal use. You are still going to have to rely on your memory of the evidence, and that's why you should pay close attention to the evidence and the testimony of every witness in the case.

You should not abandon your own recollection because some other juror's notes indicate something differently. Your notes, if you take them, are to refresh your recollection, and that's the only reason you should keep them.

I'm now going to ask Mr. Elliott, our Court Security Officer, to pass out these juror notebooks to each of the members of the jury.

In these notebooks, ladies and gentlemen, you'll see that you each have a copy of the '055, the asserted patent that we've talked about.

You'll also find a section with witness pages, and that will -- that will include a page for each witness who might testify in this case with a head and shoulders photograph of the witness and their name below that photograph on each page.

The Court's often found that it's helpful to the jury to be able to look back and see a picture of the person that testified rather than simply refer to their name that's

identified once you retire to the jury room after having heard all the evidence.

Also you'll find in there a list of the terms from the claims that have been asserted that the Court has construed and the constructions or definitions that I have given you. And as I've said, you're required to apply my definitions to those terms in addressing the issues that you're required to as the jury.

Now, when you leave each day at the end of each day's portion of the trial you need to take those notebooks with you to the jury room and leave them closed on the table in the jury room. They should either be in your possession, like they are now, or they should be in the jury room closed and on the table.

There will be times over the course of the trial that we will take a brief recess, and it probably is simpler for you to close your notebooks and leave them in your chairs because you're only going to be gone a short period of time from the jury box. And in those cases, I'll say: Ladies and gentlemen, you may simply close your notebooks and leave them in your chairs.

But unless I give you specific instructions, they either need to be in your personal possession or they need to be in the jury room.

Also you'll find, as I've noted, in the back of

those notebooks a legal pad that you can take additional notes on over the course of the trial.

Now, we're going to have opening statements from the attorneys in just a few minutes. But before we do, I want to give you a brief roadmap of how the trial is going to be structured before we get on to those opening statements of the Plaintiff and Defendants.

After the opening statements, the Plaintiff, KAIST, will present its evidence in support of its contentions that some of the claims of the patent-in-suit have been and continue to be infringed by the Defendants.

To improve -- to prove infringement on any claim, KAIST must persuade you that it is more likely true than not true -- that is, by a preponderance of the evidence -- that the Defendants have infringed that claim.

After KAIST has presented its evidence and its witnesses and rests its case, then the Defendants will present their evidence that the asserted claims of the patent-in-suit are invalid.

As I've said, invalidity of any claim requires the Defendants to persuade you by clear and convincing evidence that the claim is invalid.

And in addition to presenting evidence on invalidity, the Defendants will also put on evidence responding to the Plaintiff's proof of infringement and

damages.

Now, after the Defendants have presented all their evidence and witnesses, then the Defendants will rest their case-in-chief.

After the Defendants have rested, then the Plaintiff, KAIST, will have an opportunity to put on additional evidence responding to the Defendants' evidence that the claims are invalid and offer any rebuttal evidence regarding infringement and damages.

Because of that, this additional evidence put on by the Plaintiff after the Defendant is rest -- has rested is called the Plaintiff's rebuttal case. During it, they may present evidence to respond to any evidence offered by the Defendants.

Then after the Plaintiffs complete or rest their rebuttal case, then you will have heard all the evidence to be presented in this trial. And at that point, I will give you certain final instructions on the law to apply in this case.

These final instructions from me to you are often called the Court's charge to the jury. They're also called the Court's final jury instructions.

Once I've given you my final jury instructions or the Court's charge to the jury, then the lawyers for both Plaintiff and Defendants will present their closing

arguments. After you've heard closing arguments from both sides in the case, then I will instruct you to retire to the jury room, to deliberate upon, and to reach your unanimous verdict in this case.

Let me repeat my earlier instruction to you that you are not to discuss or communicate in any way about this case among yourselves over the course of the trial. Only when all the evidence has been presented, I have given you my final instructions or charge to the jury, you've heard closing arguments from the attorneys for both sides, and I formally instructed you to retire to the jury room and consider your verdict, at that point and only at that point, everything shifts and then you are required and obligated to discuss the evidence among yourselves.

But until that point, you are not to discuss the case, the evidence, or anything among each other or with anyone else.

Now, I want to -- I want to remind you again, ladies and gentlemen, that the attorneys, their witnesses, and the parties' representatives have been instructed not to communicate with you. So when you see them in and around the courthouse, as I've noted, they're not going to stop or say hello or good morning or be friendly in any way. You should not hold that against them. Those are simply the requirements that the Court directs toward them.

All right. With that, we'll now proceed to hear opening statements from the parties.

The Plaintiff may now present its opening statement.

Counsel, would you like a warning on your time?

MR. SHEASBY: Yes, Your Honor. Five minutes, please.

THE COURT: All right. You may proceed.

MR. SHEASBY: May it please the Court.

THE COURT: Proceed.

MR. SHEASBY: Good afternoon. My name is Jason Sheasby, and I represent the Plaintiff in this matter, KAIST IP.

I want to begin by echoing what Judge Gilstrap said. What you're doing today is incredibly important for our Constitution. The founding fathers of this country enshrined patent rights in the United States Constitution from the beginning.

THE COURT: Counsel, I don't want to interrupt, but if you're not going to use microphone, you're going to have to speak up.

MR. SHEASBY: I understand that.

I also want to make clear that though I'm speaking on behalf of KAIST, there are many, many people who are on a team that are working to protect KAIST. And I'd like those

people to actually stand up just so they can be acknowledged.

Like Judge Gilstrap, I'm going to tell you a little about myself. I was born and raised in California. I've lived there my whole life. I'm married. My wife and I have four children. We have two daughters of our own, and we raise a niece and nephew. So this is the least busy I've been all year.

We talked briefly about the Constitution. And I want to show you -- Mr. Negrete, if I could have the slides.

I want to show you the actual language of the Constitution so you can see it. I then want to show you the patent that's at issue in this case. That patent is the '055 patent. We use the last three digits of the patent.

The inventor on that patent is Professor Jong-Ho Lee. Professor Lee is a professor and a teacher in Korea. And so the question has to be asked: Why are we here today?

Well, the founding fathers and our early Congresses made clear that they wanted patents to be filed by both United States citizens and citizens of other countries. And when you think about that, it's a brilliant system. So much of what we create leaves our country. So many great ideas that are created here go away.

But through the patent system, great ideas that are created in other countries can come back to this country and

help businesses in this country.

And so what we have here is we have Professor Lee, we have KAIST, which is a university that Professor Lee originally filed a patent application with, we have Samsung, which is the largest company in Korea, we have GlobalFoundries, which is the multinational corporation, headquartered in the Cayman Islands, and we have Qualcomm, which is the largest mobile chip designer in the world.

And we're here today because there's only one location where this property right can be adjudicated. That one location is the United States, and it's this courtroom today.

I now want to talk to you about the invention that's at issue in this case. It's something called a bulk FinFET transistor. Bulk FinFET transistor. And it's Professor Lee's special design for a bulk FinFET transistor.

And a transistor, if you think about it at a very basic level, is like a switch. It turns on and off. But it's incredibly small. The size of eight, 10, 15 atoms. And by turning voltages on and off, you can create a signal.

Now, when you link those circuits together, those transistors together, you create circuits. Circuits pass information. And when you combine enough circuits together, you create chips, and it's these chips that power our lives.

Now, these chips are incredibly advanced. They're

so advanced that they're not even called chips by themselves, they're called system on a chip or SoCs. And that phrase is used because these chips are so incredible because they're so powerful. And it's these chips that drive our daily lives.

Now, I want to talk to you briefly about Professor Lee. And I'm going to ask him, although he'll be reluctant, to talk about his background.

Professor Lee is one of the most elite researchers in the world. He is the director of all university inter-academic semiconductor chip research in Korea.

In addition to that, he's a professor, and to this day he still teaches and trains students. He has 95 patents. He has over 600 research articles. And he has over 120 research articles on the exact subject of this case, FinFETs, bulk FinFETs.

He has won the highest awards given by the Republic of Korea for the invention at issue in this case. Let me say that again. Not Samsung, not Qualcomm, not GlobalFoundries, it was Professor Lee who won the highest award that can be given by the republic of Korea for the invention at issue in this case.

Now, let's talk about who the Plaintiff in this matter is.

So when Professor Lee was a young researcher, he

thought of this idea, and he thought it was incredibly important, and he disclosed it to the research -- research institution that he was collaborating with at that time, it was the Korean Advance Institute of Science & Technology. That's a nonprofit State University.

Over time, they continued to collaborate, and working also with an institution in Korea called P&IB that helps and protects professors who have patents, they formed a joint venture. And the U.S. subsidiary of that joint venture now owns this patent.

The parties who receive any award that you grant in this case are KAIST, the university, P&IB, and importantly, Professor Lee himself.

There are three Defendants or three groups of Defendants in this case.

The first is Samsung. And Samsung does three very important things. First, it designs chips. Designs those systems on a chip. Then, it also manufactures those chips. But the process it uses, it makes chips not just for itself but for other companies. That's what's called a foundry.

In addition to designing chips and making chips, it also puts those chips in products. These are the Galaxy smartphones and the Galaxy tablets that we love so much, and we wait anxiously to see what the new features are going to be.

There's GlobalFoundries. GlobalFoundries is a foundry. All they do is make chips for other people.

And then there's Qualcomm. Qualcomm doesn't make any chips itself. All it does is design chips. And it uses GlobalFoundries and Samsung as a contractor to design.

All of these chips, the chips made by GlobalFoundries, the chips designed by Qualcomm, the chips designed by Samsung and Qualcomm -- and by Samsung and made by Samsung all infringe the patents. There are billions of transistors in these chips, each one of which is Professor Lee's bulk FinFET transistor.

Professor Lee actually manufactured at the Seoul National University one of his transistors, and he published on it. And shortly after he had successfully manufactured that chip, his lab student at the time, Tai-Su Park, who was also a Samsung engineer, took the technology back to Samsung. There's no dispute about this. Tai-Su Park admitted it in his sworn deposition. He took the technology back to Samsung.

Now, there's nothing wrong with him taking the technology back to Samsung. The whole point of the patent system is for folks to find good ideas. But the trade-off is when you find those good ideas, you must follow the law, whether you're a foreigner or a citizen of this country, you must follow the law of this country. And the law of this

country is that you're not allowed to use the technology unless you take a license.

Now, in addition to actually taking Professor Lee's invention back to Samsung, Samsung was absolutely aware of this patent. Once again, it's not in dispute, Tai-Su Park admits that he was aware of the Korean application that Professor Lee filed in 2002. The Korean application is identical to the U.S. patent.

He also admits that he discussed Professor Lee's bulk FinFET technology patents with Samsung's IP legal team. These are undisputed facts.

Now, there was something said that I really was struck by, and it was in -- when counsel was speaking with you. They start talking about the fact that, oh, how could you have waited 12 years to tell someone about the oil derrick in their yard. The chips that are infringing in this case, they weren't sold until 2015. That's when they were sold for the first time.

And Professor Lee, through his agent, approached Samsung in 2011, in 2012, in 2015, and right before this suit.

Counsel for the Defendants will show you a timeline. I want you to look at that timeline and see if counsel put those disclosures on his timeline.

Now, there's also some suggestion that Professor

Lee couldn't do this himself. He needed Samsung. They did something different, and they did something independent.

I'm going to tell you another fact. Between 2006 and 2012, Samsung repeatedly, again and again and again, asked Professor Lee to come in and teach their engineer about his bulk FinFET technology.

Now, I want to show you something, you see that little red-yellow stamp in the bottom corner, that's called an exhibit number. You can write down exhibit numbers, and they can be given to you in your deliberations. I want you to pay careful attention to how many exhibit numbers Defendants use in their opening. In particular, how many exhibit numbers they use when they talk about their excuses as to why they don't infringe or why the patent is invalid, or why they do something that's not completely different.

So this is one example Professor Lee giving -- this is the actual slide that he gave to Samsung.

And remember how counsel said we do something completely different than Professor Lee did. Well, if they did something completely different from Professor Lee, why did they call him in 2006 multiple times, why did they call him in 2012 multiple times? In fact, the corporate representative from Samsung will admit in his testimony that he asked Professor Lee to come and give multi-day seminars on bulk FinFET technology to Samsung engineers just before

Samsung announced that it was going to commercialize the technology formally.

On the left-hand side, you can see Professor Lee's design.

On the right-hand side, this is an actual Samsung document, and you'll see the striking similarity.

So I want you to separate out words from evidence.

One of the jurors on voir dire said something. She said you've got to believe -- you've got to make me trust you. Well, ladies and gentlemen of the jury, I have something else to say. I don't want you to trust me, I want you to trust the evidence. The evidence is there.

On the left-hand side is what Professor Lee showed to Samsung. On the right-hand side is the design in this case. That's not some made-up figure. That's the figure from the process documents, the confidential process documents that they use in the case.

Now, counsel for defense talked about the witnesses who are here, but I want to talk to you about two witnesses who are not here.

One of those is chief executive officer of Samsung chips, Kinam Kim. In 2002, Professor Lee told Kinam Kim about his patents. In 2002, Professor Lee told Kinam Kim that the future of Samsung as a company would be bulk FinFET.

In 2015, Samsung launched a bulk FinFET. And Professor Lee did everything he could to tell Samsung how important this would be. And, of course, he supported them time and time again.

We will not hear from Kinam Kim ever. We will not hear any explanation from him as to why in 2002 when Professor Lee tells him bulk FinFET is the future and after years and years of supporting Professor Lee's collaboration, in 2015, Professor Lee is left betrayed.

We also won't hear from Dongwoo Park. Dongwoo Park was a senior R&D executive. Dongwoo Park had extensive discussions with Professor Lee. Dongwoo Park acknowledged in e-mails that Professor Lee was the first to invent bulk FinFET, before him and before Samsung. Kinam Kim and Dongwoo Park were the bosses of Samsung's corporate representative in this case. Kinam Kim is now the president of Samsung chips.

Why aren't they here answering for their conduct?

Now, I want to talk briefly about infringement. This is one of the claims in the patent. And I want to flag something for you, and I want you to remember this. You see that word "comprising"? Do you remember how Judge Gilstrap told you there was something very important about the words "comprising"? Comprising means you have to have the required elements, but if you have more, it's irrelevant.

And so every time Samsung says we do something different, always remember that comprising language, and remember what Judge Gilstrap told you.

So what we're going to do is we're going to march through element-by-element-by-element showing that the claims are met. And the person that's going to do that is someone incredibly special, and I would like her to stand right now. It's Dr. Kelin Kuhn.

Dr. Kelin Kuhn was for many years a fellow at Intel Corporation. Intel is the largest American chip manufacturer in the world. It's been overtaken by Samsung, but it's the largest American.

And it was Professor -- Dr. Kuhn who discovered Professor Lee's papers that he wrote, discovered the transistor that he made, and used this as part of the consideration and deliberations for Intel to launch its first bulk FinFET transistor. Intel was first. They launched it in 2012.

And I'm going to tell you something else. Intel took a license to Professor Lee's patent, the '055 patent. They did it voluntarily. They did it without litigation, and they did it early. They did it when other people were doubting whether bulk FinFET would ever work. They did it when everyone thought there were other options. Intel took a license, and Intel got an incredible deal because they had

faith in Professor Lee. They acted correctly. They followed the law.

I'm also going to tell you something else. You remember Judge Gilstrap was talking about how experts need to have technical expertise in the field we're dealing with? What's the field we're dealing with? The field we're dealing with is commercial scale manufacture of these bulk FinFET transistors. That's our field. You're going to hear from multiple technical experts on Defendants' side.

But I want you to pay careful attention, because there's only one expert witness in this case who has ever designed commercial FinFET transistors and has ever designed a manufacturing process for commercial FinFET transistors. And do you know who that is? It's Dr. Kuhn. That's right.

We're also going to show you not just external information. We're going to show you the testimony of Defendants' own witnesses.

Heedon Jeong is an engineer. He testified under oath. You're going to have to hear his testimony by video because Samsung didn't bring him to trial. But I want you to pay careful attention to his testimony. You're going to see internal confidential documents that the Defendants in this case were obligated -- obligated to turn over and that we weren't able to use to analyze this case.

And you're also going to see independent analysis

that was done by one of the most widely respected chip analyzers in the world called TechInsights. All of this evidence is going to be available to you.

So you might ask yourself the question -- Samsung is this big massive company. It's the largest company in Korea. Why did they take Professor Lee's technology? Why did they infringe it?

Well, it's actually a fascinating story. So every two years, transistors must shrink. And these are pictures -- microscopic pictures of transistors. Nanometer is a measure of length. 130 nanometers, 90, 65, 45, 32, 20 to 22.

Well, the transistors must shrink every two years because that's how you get faster and more energy-efficient phones. Why do I wait anxiously for the next Samsung Galaxy phone to come out? Because I know it's going to have better features. I know it's going to have better battery life. I know it's going to be faster. And the only -- the thing that drives this is the size of the transistor.

Now, at 20 nanometers, something happened. 20 nanometers didn't use bulk FinFET transistors. They didn't use Professor Lee's bulk FinFET transistors. They used an old design called planar. Planar technology.

And this is an internal GlobalFoundries document. This is not some puffery that was given to the public. This

is their internal document, and they said: End of bulk CMOS scaling. Planar CMOS is hitting hard scaling limits at 20 nanometers. There's a lot of jargon there, but I want to translate it for you. They're saying they could not make things any smaller using planar transistors. They failed.

Samsung in its internal documents says the same thing. At sizes less than 20 nanometers, it will be impossible. At sizes less than 20 nanometers, it will be impossible. These are Samsung's internal documents. This is not me saying it. These are the internal documents.

And let me tell you what happened when Samsung and the other Defendants used 20 nanometers planar devices, right before they infringe Professor Lee's devices. They failed. They failed. Samsung was not able to attract a single -- single external customer for 20 nanometers. Remember how I told you Samsung makes chips for other companies. Not a single customer would buy their 20-nanometer process technology. They lost a hundred percent of Apple's business.

Funny story. Apple and Samsung are profound competitors, but because process technology is so important -- process is what you use to make a transistor -- Apple actually uses Samsung to make their chips. They did it earlier, and then at 20 nanometers, the last of the planar generation, they lost a hundred percent of the

business. And Sam -- and Samsung also lost a hundred percent of Qualcomm's business at 20 nanometers. They were losing immense amounts of business.

GlobalFoundries was the same. GlobalFoundries could only attract one customer for their 20-nanometer process. That's the old planar technology. There was no other demand.

And Qualcomm used 20-nanometer technology from another company called TSMC, and that technology was so bad that public documents describe it as essentially worthless. So this is the old technology -- the old planar technology, and it failed.

But there was a solution. When Samsung and GlobalFoundries adopted the bulk FinFET transistor that's at issue in this case, their business blossomed. Apple -- they had lost all their business. They regained it as a customer. Qualcomm lost all their business. They regained it as a customer.

Nvidia, the largest GPU manufacturer in the world, gave no business to Samsung at 20 nanometers and embraced Samsung at -- at the bulk FinFET transistor.

Now, I'm going to tell you a piece of jargon. The bulk FinFET transistor that's at issue in this case is sometimes referred to as a 14-nanometer bulk FinFET transistor. 14-nanometer. That's the infringing

transistor, and you get it -- 20 nanometers was planar. It failed. The way you get more speed and energy is by getting smaller and smaller and smaller, and so they made this 14-nanometer infringing bulk FinFET.

The same way with GlobalFoundries, Apple, Samsung, Qualcomm, GPUs, AMD, and MediaTek. They didn't give any business to GlobalFoundries at 20 nanometers, and they gave business to Samsung at -- to GlobalFoundries at 14 nanometers.

These are Samsung's and GlobalFoundries's internal documents talking about 14 nanometers. Dramatic performance gain. It will be undisputed that that is referring to the 14-nanometer bulk FinFET.

FinFET offers break-through performance and power. That's the infringing bulk FinFET. These are not puffing to consumers, these are the internal documents of these companies.

So now I want to talk briefly about damages in this case.

So one of the jurors who was excused made the mention of the fact that context is everything. The electronics industry is different from the teaching industry.

I want to give you an understanding of the profound scale of what is at issue here. GlobalFoundries, which is

actually one of the smaller chip manufacturers in the groups that compete spent $14.7 billion building the factory just so they could make the bulk FinFET transistor.

Let me say that again, GlobalFoundries spent $14.7 billion to give themselves the opportunity to make the bulk FinFET transistor. That tells you how incredibly valuable this technology is.

And that's not me saying it. That was from the report of Stephen Becker, Defendants' expert.

This is a Qualcomm internal document. And they actually did an analysis of how much Qualcomm saved by stopping using 20 nanometers and shifting to 14 nanometers.

And the internal analysis is that for one chip family, Qualcomm was going to save $400 million over a period of three years by using the infringing 14-nanometer technology. That's for one chip family.

Qualcomm made at least three, if not four, different chip families at 20 nanometers, and then it shifted those to 14 nanometers. This was just for one family. I'm telling you this so you can see the extraordinary scale of what is at issue here.

Cost savings. Using a detailed analysis based on the internal documents of the Defendants, the experts in this case conclude that just for the period between November 2016 and May 2018, Samsung and GlobalFoundries saved $1.6

billion by using this technology as opposed to their older technology.

By the way, there will be no other alternative cost number presented to you in this case. By the benefits of shifting from the planar technology to the 14-nanometer technology. Defendants who have every interest in the world to give you a different number won't.

So then we did something else. Because you know how I told you when you shrink transistors you get faster and more energy efficient chips? Well, I don't actually want you to believe me. I don't want you to take my word for that.

I would like Mr. Witt to stand up.

Mr. Witt is the retired director of worldwide chip design at Texas Instruments.

THE COURT: You have five minutes remaining.

MR. SHEASBY: He is the person who determined that these chips have these incredible speed and graphics benefits that you see in this case.

The profits that Defendants have gotten from this case are over $6 billion solely from using this patent, $6 billion. And that's what the record will show.

I want to talk about a few other things.

Samsung is going to speak to you, and the Defendants are going to speak to you about invalidity. But

I think it's important to keep in mind that there's a presumption of validity as to the patent.

And when you speak -- when they speak about the invalidity case, ask if there's any processor, whatsoever, any processor, whatsoever, that they're pointing to at prior art that was ever made that was ever commercially successful. They won't point to any. All their prior art, all of it failed.

They're going to tell you that we should get the same great deal that Intel got. Intel paid $7 million approximately for a license to the U.S. patent in 2012. They're actually saying we should pay less than Intel paid.

Their damages expert in his deposition proposed that these three Defendants collectively paid less than Intel will pay. But the differences between 2011 and 2012 and today are vast. They're vast in the sense that in 2012, there were lots of different options, and today, there are no other options. There is nothing that works in this industry right now today for mobile SoCs other than bulk FinFET technology.

And I'm going to leave you with one thing. Samsung says it's okay, GlobalFoundries said what they did is okay. It's not okay. What they did is not okay.

Tai-Su Park, Professor Lee's graduate student, under oath admitted that at never a point in time before

this case has he ever claimed that Samsung or himself has any contribution to the '055. He said that under oath. And for them to come in today and take credit for something that Professor Lee did is wrong.

Ladies and gentlemen of the jury, I hope these are the facts I will be able to present to you today. I believe these are the facts I will be able to show to you in trial. And I urge you to listen carefully to what Defendants say, and I urge you to look carefully for when they have deposition testimony and when they have actual evidence supporting the assertions they make.

Ladies and gentlemen of the jury, this is a profoundly important case. What has occurred in this instance is extremely serious. And I thank you for your service and your attention.

THE COURT: Counsel for the Defendants may now present its opening statement.

Would you like a warning on your time, Mr. Jacobs?

MR. JACOBS: Thank you, Your Honor. Could I get a 10 and a five-minute warning, please?

THE COURT: All right. You may proceed.

MR. JACOBS: Thank you, Your Honor.

Ladies and gentlemen of the jury, my name is Blair Jacobs. I am with the Paul Hastings law firm, and I represent the Defendants, along with a significant team of

people helping out. There's a lot of people helping. This is a vastly important case for the Defendants, as well.

A couple of things I just want to reflect upon before I actually lead into my presentation.

First of all, there were a number of statements made during the opening statement we just heard to look for evidence, look for document labels, and things of that nature.

An opening statement is not evidence. What lawyers tell you during an opening statement is not evidence. It is a preview of what the evidence will show. And that is what I am going to do. I am going to preview for you during this opening statement what the evidence will show.

And the reason why that's important to know is because you just heard a complete incorrect story. You heard a story that really is inconsistent with what the evidence will show. There is very little about what you just heard that will be consistent with the evidence.

I'm going to focus on four different things that I talked to you about during my opening. First of all, this is a story of collaboration. This is not about the Defendants taking technology. This is a story about that student, the student who was pointed out a couple of times, Dr. Park from Samsung, he was asked, he was asked when he was working with Professor Lee. You didn't hear that during

their opening statement, did you? He was asked in 2002, it's a research idea at a university. That's all Professor Lee has.

And Professor Lee asks Mr. Park, can you take this to Samsung and can you commercialize this? That's what the evidence is going to show. I can't do it here. I can't take this idea and move it forward. I need a big semiconductor manufacturing company with a large fab center that somebody who can actually make these things in order for this to be successful.

So he asked Samsung to do this. He asked Mr. Park to do this.

And I'll highlight some of that evidence with you during the opening today, but you're going to see a lot of evidence, and you're going to hear a lot of evidence about the fact that Professor Lee knew that he needed Samsung.

Something that's very, very important, Samsung starts working on this -- this project in 2002. And as we heard, it took until 2015.

Samsung figured out that Professor Lee's technology would not work, would not work in a mass manufactured product. There was no way they could use the technology, and so they had to change the technology substantially.

And I will show you during the opening statement how and when they had to change it. They had to change it a

couple of times, and you will hear from our fact witnesses as to how the technology had to be changed.

So this is a story of actually Samsung helping Professor Lee. And you may say why would Professor Lee want help from Samsung? Why would he want help from a company like that?

Couple of things. University professors get funding. In this instance, funding from the government for their projects. And in order for that funding to continue, they need to show that they have companies who are interested and who are helping them to commercialize their ideas. So that's why you need, when you're a professor, some assistance from somebody like Samsung to help you along the way. And that's what happened here.

The second thing that I want you to bear in mind is, we saw that slide, and we'll talk about a little bit of the scaling of devices getting smaller and smaller and smaller.

This idea was conceived in 2001. We'll hear some testimony about that. The patent at issue was filed in 2003. Well, remember the 2000s and remember how everything -- the technology was changing so fast. Chips were getting smaller along the way.

Well, guess what happened? Around 2006, 2007, chips using the technology in Professor Lee's patent, they

couldn't get any smaller. They would have had to stop. Samsung, who was helping him, looking at this technology, figured out this isn't going to work. We've -- we've hit a limit. We can't make these devices any smaller. And I'll show you what they did.

They added an additional insulation layer that's not contemplated in the patent to their device, and that allowed them to make the devices smaller and smaller and smaller to the point where the product at issue here, this 14 nanometers -- just so you have a mindset of the scale at issue here, when Professor Lee wrote his research ideas down and filed his paper back in -- his patent back in 2003, devices were about 90 nanometers.

So over that period of time, and we have a timeline I'll show you, they shrunk all the way down. It was about at the 45-nanometer level in 2007 devices couldn't get any smaller. And Samsung came up with a new device idea, a new structure that allowed the device to get smaller.

And this -- these changes lead to three different ways that the device at issue here is different than the patent. And so I'll walk you through the patent, and I'll show you how the device at issue here is smaller.

There are going to be fact witnesses who confirm this. There are going to be expert witnesses who confirm this. And there are going to be documents that show that

this occurred. There were a couple of documents shown during the opening statement of the Plaintiff where they actually were -- they had in those documents this -- this -- it's called a Hafnium oxide layer. It's a new insulation layer in the product that was not in patent, and that's what allowed the substantial change in technology in about 2007. That was the new design. And I'll point that out, and we'll walk through that a little bit.

So those are the first three points that I want to kind of focus on and talk with you about.

The fourth is Professor Lee did not invent the bulk FinFET device. I don't think there's going to be a dispute about that. There were already these concepts out there. He -- he improved allegedly upon them, but others, in fact, had already done this. There were a lot of companies working in this area. Toshiba was heavily involved. And so we're going to show you some patents that indicate and show that we actually don't infringe, as well, that -- because this patent is invalid.

Under our laws, you can only have an idea that is new or novel once. Once somebody else has the idea before you, your patent is no longer valid. That leads to an invalid patent.

So at the end of the day, the evidence will show that Professor Lee asked Samsung -- requested Samsung to

work on this technology. And so he asked us to help, and we worked on the technology. If you look on this slide in front of you. For -- for many, many years, starting in the 2002 time frame, we worked on the technology. And at the same time, if you look at the top of the slide, we're working with Professor Lee.

So there -- there's constant contact between Professor Lee on all types of projects we're working on together. We're supporting Professor Lee, if you look at the bottom of the slide, and we're working together. And -- and this -- the concern is never raised -- this patent issues in 2005. The patent application is filed in 2003. There's never a concern raised, like, hey, you guys, I know you're doing this work, we're working on this FinFET stuff. You might want to -- you might want to be concerned. I have this patent. Let's talk about it.

In fact, it was raised for the first time, the allegation or the assertion of infringement, in 2014. Counsel mentioned during his opening some -- some -- some inquiries in 2011 and 2012, but there was -- the evidence will show that there was no notification of potential infringement until the latter part of 2014.

So -- so what we have here, if you look at this timeline is, we have a scenario where I broke it down into a smaller time period. This is 2000 to 2005 essentially. The

parties are working together. They're collaborating. They know what's going on. They're working on different technology, on the same technology. And at the same time Professor Lee is being supported by Samsung. You can see on the bottom of the slide he's being supported. No concerns are raised.

Move to 2006 to 2016. Same thing. They're working together. There's lots of meetings. And at the same time, there is support being filed. If you -- if you look at the orange, this is the history of basically the filing of the dispute.

In 2012, the evidence will show Professor Lee assigns the interest in his patent to a -- a company that funds litigation, okay? They're -- they're a litigation funding company. And so he assigns his patent rights to this litigation funding company.

MR. SHEASBY: Your Honor, I object.

THE COURT: Approach the bench, counsel.

(Bench conference.)

THE COURT: What's your objection?

MR. SHEASBY: P&IB is not a litigation funding company. And there is -- there's a rule that any discussion of trolls or any -- against trolls. Clearly inflammatory statement. They're not a litigation funding company, and it's improper for him to say that.

THE COURT: Well, it's not improper for him to make a misstatement. It is improper for him to violate an order in limine of the Court.

MR. JACOBS: Your Honor, I didn't say troll. They are a litigation funding company. Their own website says it, and we intend on cross-examining witnesses because they say on their website they fund litigation for people that don't have resources.

MR. SHEASBY: Litigation funding company is the same thing as troll. He was permitted to call them a non --

THE COURT: Just a minute, counsel.

Well, the limine order prohibits the use of the term "troll" or similarly disparaging labels as to KAIST IP US. It allows for reference to a non-practicing entity. I think it's a close call. I'm not going to continue this disruption of the Defendants' opening any longer. I'm going to overrule the objection.

MR. SHEASBY: Thank you, Your Honor.

THE COURT: Don't walk away until I'm finished, okay?

MR. JACOBS: Yes, Your Honor.

THE COURT: I expect the Defendant to stay away from this going forward.

MR. JACOBS: Understood, Your Honor.

THE COURT: Let's go forward.

(Bench conference concluded.)

THE COURT: Objection is overruled. Let's continue with the Defendants' opening.

MR. JACOBS: So as I was saying, 2012, we have the assignment of this interest to P -- P&IB. And you'll see that P&IB then assigns the rights to KAIST IP Company Limited. That is a non-practicing entity. They don't make products. They don't use the products. They in no way are a manufacturing entity. And then they form KAIST IP US shortly after that, and then the lawsuit is filed shortly after that.

So this is the timeline of what happened here, and what we have is a scenario where Professor Lee asked Samsung for help. He wanted Samsung to help him. He said: Come help me commercialize this. It will improve my stature at the university. It will -- it will improve my stature with regard to receiving funding. They worked together for a long time period, and there is support provided along the way. And then after that time period, there's a lawsuit filed in 2016 -- in the end of 2016 after working together essentially from 2002 to 2016.

Now, fundamental fairness tells us that we should be grateful for those who help us with -- with things that we offer and provide along the way in life. And that is -- that is not what happened.

Admittedly, this is a different story than what you heard from Plaintiff in their opening. And -- well, we're going to lay all of the cards on the table, and we want to show you that this is a scenario where, in fact, Professor Lee was reaching out for help from Samsung.

So if you look at the slide that I have in front right now, Slide 6, there's a couple of things here.

This is an e-mail, and we're going to show you other documents like this throughout the -- throughout the case. This is an exhibit in the case. And it's an e-mail in 2002 in August. And it's written by Professor Lee to vice president Kim, semiconductor group. And there's a couple of things that are important that I wanted to read to you in this e-mail and the e-mail that follows.

First of all, Professor Lee says, 2002: We have been trying to do something in school, but as you may know, there are a lot of difficulties.

The evidence will show us that there -- their equipment wouldn't work at the research level.

We are currently manufacturing -- next paragraph -- currently manufacturing the device at Samsung Electronics.

And then you'll see Professor Lee's thanks: Especially, I would like to express gratitude and our greatest appreciation.

And he names -- these are Samsung people who are

helping him along the way.

And then the next -- next sentence he says: I think none of this would have been accomplished without your help.

He goes forward in the last paragraph to say: In the future, could we carry out these series of tasks at your department?

So, in fact, this is not a scenario of the student taking something and then taking it to Samsung. As you can see, Samsung is asked to help.

As a matter of fact, in this same e-mail chain a month later, there's a follow-up. You'll see this is September of 2002. And look at some of the sentences in here.

If you look down you'll see -- the second -- third paragraph at the end: I think Samsung should gradually prepare the device from now on which -- which it will have to compete in the future.

So this is Professor Lee telling Samsung, I think you, Samsung, should prepare the device, manufacture, fabricate, the things that he can't do. And Samsung, you will have this to compete in the future.

There's further discussion of Samsung's help in here.

And then he says in the fifth paragraph: Even

though this is my personal idea, how about making a body-tied double-gate one of Samsung Electronics's specific structures and selling it all over the world?

So he's telling them, you should try to commercialize this. You should try to fabricate this. You're helping me in these efforts. I need your assistance.

And look at the last paragraph, he says -- and it's highlighted in yellow: Especially from the perspective of a company in terms of production and yield, double-gate device might be ridiculous.

In other words, he doesn't know at this point in time whether this is going to be able to be fabricated or made because a company like Samsung, and the evidence will show this, has to invest hundreds of engineers and hundreds of millions of dollars in research and development efforts into figuring out whether or not a device like this can be manufactured. And that's what the evidence will show. The evidence will show that Professor Lee desired this help and, in fact, he asked for this help.

There's a series of documents. I only showed you one. There's going to be a series of documents. You're going to see evidence that -- from Professor Lee that he couldn't make the device at the university, that he needed Samsung's help to make it, that Samsung would be the company that was making the device, and that Samsung would have the

device to compete.

He even said he didn't know at that point in time whether this was even feasible or possible. Samsung took it, and they're the ones that came up with the idea that allowed for this to actually happen.

There's further documents in -- and exchanges between Professor Lee and other organizations he had to communicate with and report to regular. And in those reports he says things like I need companies like Samsung to help because without the help of these companies, I won't be able to commercialize the device. I won't ever be able to do anything here.

He also says Samsung is the first in the world to make a bulk FinFET device. He says that in documents that we will see as well. And he mentions the transfer of technologies to Samsung. Again, further acknowledgment that Samsung is helping.

This timeline generally shows all of the interactions over the time period. And I want you to focus on the detour sign in 2007, because in 2007, something very, very important happened within Samsung, and there were substantial changes made to the product.

But before I get into that, I'm going to highlight that as part of our discussion of the non-infringement.

Let me just tell you just a little bit about the

companies. I think you know about Samsung. They have been making consumer electronic products for a long, long time now. You'll see TVs, refrigerators. They make all types of products, and they've been doing it for a long, long time. So Samsung is one of the Defendants here.

They're also one of the largest chip makers in the world. This is a wafer that you see in front of it. And a wafer is typically going to have many, many, many small chips on it. And when you get to a chip, a chip is going to have lots of transistors on it, the transistor is what is at issue in this case.

GlobalFoundries is another Defendant involved here. GlobalFoundries has a license with Samsung to use the Samsung technology. That's why GlobalFoundries is here.

But there's going to be two GlobalFoundries's witnesses who are going to testify. So let me talk a little bit about them.

They make semiconductors for other companies. That's their jobs. They have a large, large, large facility up in Malta, New York. And in Malta, New York they have over 3,000 employees who are working on the fabrication and the manufacturing of semiconductor devices at all times. So they're involved, as well.

The third Defendant, as you heard, was Qualcomm. Qualcomm is here because they are using the Exynos

technology, which is technology that is in the Samsung chips. They're using those in some of the Qualcomm chips. Here is one of the chips, the Qualcomm Snapdragon. So that's why Qualcomm is involved in the case.

We are going to bring forward four different fact witnesses to talk with you.

First of all, we're going to have Dong-won Kim. He was in charge of the building of the semiconductor device. He's going to testify as to the changes that were made and why they were made, and the fact that in making those changes, we made a product that could not have been made using the old technology in the '055 patent and in Professor Lee's research ideas. He -- he is a master at Samsung. And he was in charge of the R&D efforts for this program.

We're going to bring the student, Dr. Park, Tai-Su Park, and he's going to talk about what he and Professor Lee talked about in 2002. And how when he took the idea back to Samsung, he took a double-gate -- and you'll see this in the patent -- a double-gate idea and quickly figured out within a short period of time couldn't manufacture a device with that technology, and he'll explain why. He's going to be a fact witness also.

David Bennett is GlobalFoundries's vice president of strategic agreements and alliances. He's been in the industry for many, many years. He worked at Texas

Instruments for years before joining GlobalFoundries. And he's going to testify about GlobalFoundries. GlobalFoundries, what they're doing. He's the corporate representative for GlobalFoundries.

Our final fact witness is going to be Srikanth Samavedam. And he received his Ph.D. from MIT. He works on the chips at GlobalFoundries. He was asked as part of this case, take a look at the patents, take a look at the devices that Samsung and GlobalFoundries are using. He's an engineer who helps to build the chips, and he's going to tell from a factual perspective what he knows about the structure of the devices. So he's going to tell you a little bit about why these devices are successful, why they're different, and why these devices are as popular and successful as they are.

And they're popular and successful, we're not going to deny that. There has been a lot sold, there's no doubt, but they have been sold because of the technology that Samsung independently developed. They are sold because -- and I'll show you here exactly what that was. But let me start off by just showing you the patent.

As I mentioned, look at the title of the patent, Double-Gate FinFET Device and Fabricating Method Thereof.

THE COURT: 10 minutes have been used -- or excuse me, 10 minutes remaining.

MR. JACOBS: Thank you, Your Honor.

The reason why that's important is because this is the idea, you're going to see it in the claims, this is the patented idea.

Patents are incremental growth ideas. In other words, the Model T had some patent. You'll see patents above it, had patents relating to it.

But look what happens throughout the years. Throughout the years as things improve and as technology evolves, there's over a 100,000 U.S. patents covering automobiles these days. So -- so every time a new idea is advanced with regard to a product, you can get a new patent on that idea.

With regard to the three infringement -- non-infringement positions I told you that we would be advancing, you see them right here. I'm going to walk through each one of them quickly in just one second.

Our expert witnesses are going to spend a lot of time on this. In order for infringement to occur, and I think the Judge touched upon this a little bit, you have to have all of the elements in the claims.

So looking at this as a bowling analogy, if you have all of the elements in the claims and they're all knocked down, you have infringement. If you have two or three elements left or one or three elements not satisfied

in the product, that's non-infringement. That's a high level example of infringement versus non-infringement.

Another commonly used example is a patent is like a piece of property. You're entitled to the words of your claims and nothing beyond that.

We have two technical experts. I'd like them to stand up. First is Dr. Subramanian. He's in here. Dr. Subramanian is -- he has his Ph.D. from Stanford. He's going to testify on the technical defenses in this case with regard to the FinFET structure and why Samsung and the other Defendants do not use the structure in the -- in the patents.

We also have Dr. Robert Wallace. Dr. Wallace. There he is. Dr. Wallace is an expert in material sciences. He's an expert -- as you can see, he's an IEEE fellow, and he is going to testify about some of the non-infringement positions relating to some of the changes that I was talking about in 2007.

The three elements that are not found in the Samsung products, they exist in all of the claims that are asserted in this case. That's all this slide is intended to show you. These are two independent claims. The Judge talked about independent claims. But these missing pieces are in all of the patents.

Here is what happened with the development in 2007.

As you can see, on the left-hand side, in 2003, you have a -- a larger device, 90 nanometers. And this blue part of that is called a silicon oxide layer. It's an insulating layer, okay? And those -- those yellow things are electrons. And no problem, they're able to be contained. They're not leaking because you have a wider gate here, 90 nanometers.

But flash forward to 2005. All of a sudden, you start to see leakage as the devices are getting smaller. This is 65 nanometers. And that leakage make your cell phone batteries die. It makes your cell phones die. It's not a good thing.

So the solution to that -- and this is what Samsung came up with to solve the problem. This is what is not in the patent. It was adding another layer of protection. You'll see the black line on the right -- on the right-hand side, and that is a Hafnium oxide layer that goes on top of the silicon, the oxide layer.

The key takeaway here is you could not have made products smaller than 45 nanometers without adding this new and different layer which is made through a different process, it's different compounds, and you use different tools to add this layer. That is the change that Samsung came about, along with modifying the structure of the chip, as well.

We'll talk a little bit, and our witnesses will talk with you a little bit about that, as well. This is change -- this has been described as a groundbreaking change in the technology. And there's also some testimony that we will see that this has been described as one of the greatest advances in transistor technology since the late 1960s.

So as a result of that, you have in the claims -- if you look at this, the green would be your gate, blue would be your first oxide layer, if you look at the claim, and the orange would be the Fin. You have a claim requirement here that you have a first oxide layer that is formed on the upper -- upper surface of the orange. So the blue has to be formed on the orange. And the green has to be formed on the blue.

If you look to the right-hand side, you'll see a little trace here --

THE COURT: Five minutes remaining.

MR. JACOBS: Thank you, Your Honor.

The Defendants have the green formed on the Hafnium oxide layer. They have the silicon -- the blue, the silicon oxide layer formed on the Fin, but they do not have the green formed on the blue and the blue formed on the orange. That is what the claims require. That's what the difference of their device in 2007 allows. It allows that the very, very words of the patents with regard to this first oxide

layer are not satisfied.

You will see this in other pictures. You'll see it in microscopic shots and things of that nature as we move forward.

Second non-infringement position, you'll see that the claims require a thickness greater than or equal to the gate oxide. The gates are the things on the side of the Fin so you see the side. And the top that -- that is the upper surface of the Fin active region. Because of the way these devices are manufactured at Samsung, because of the different technology, it's actually thinner at the top of the Fin active region. And that's what this shows us. You'll see the measurements, 2.2. On the side -- on gates on the side, 3.19 and 3.48.

The last non-infringement position that will be advanced is the claims all require a Fin active region which is a wall-shape. And, in fact, what the shape is that's being used because of the manufacturability of these things -- again, not a research idea -- the manufacturability, the patent shows a rectangular wall-shape again and again and again when it's talking about what this wall-shape requirement is.

Looking on the right-hand side, that's, again, an actual microscopic picture of one of the Samsung devices. It's a parabola. It is not a rectangular wall-shape. It's

a parabola. That's the third distinction.

So there's three different non-infringement positions, as summarized here on Slide 40, and each one of these are going to be explained by fact witnesses, documents, and experts.

Now, there's no dispute that Professor Lee did not invent FinFET. This is a timeline showing other ideas that were out there before. There's no dispute about that. And so we have a patent that we found from 1995. It was not cited to the Patent Office. That's important to note, okay? This was never in front of the Patent Office, the Mizuno reference. And our expert witnesses will walk you through, and they will show you that each one of the elements found -- let me stop right here -- each one of the elements found actually do exist in Mizuno. So you're going to have, when you match the colors, and we've colored matched this here on Slide 44 -- you're going to actually have all the elements here, which is very, very different than when we did the non-infringement position, and that Hafnium oxide layer was different.

Here, when you look at Mizuno, it's the same exact thing.

Could I have the ELMO, please?

So this was one of the demonstratives used by the Plaintiff. And what I wanted to point out to you is at the

45-nanometer level -- this was their own document. At the 45-nanometer level, you will see High-k. That's where the Hafnium oxide layer had to be added. It says it right in their own demonstrative that they're using. As you move down -- you can't get smaller unless you add that layer. This document is exactly what we're saying, our groundbreaking non-infringement position right here.

They also tried to show you that this showed that we were similar. They didn't mention this. They used this to show that we were the same. But see that HK layer right there, this HK layer is actually -- that's the Hafnium oxide. So this whole pink wrapping around, that's different. That's not shown over here. And by the way, this is 2006. This is different than his patent. His patent was filed in 2003, and it has the rectangular Fin, remember? So this is different. We didn't steal his idea. That's not what happened at all.

So in the end of the day, ladies and gentlemen, just ask yourself which witnesses are the most credible. That's very, very important. Which side presents evidence that shows what actually happened, the full picture, absolutely everything? Which side is shooting straight with you here? Who's -- who's telling part of the story? Who's hiding things from you? We're not hiding everything. We're putting our cards on the table. We're bringing in a series

of witnesses.

And at the end of the day, ladies and gentlemen, we're going to ask you for a finding of non-infringement. When it comes to damages, zero is the appropriate damages here, zero.

There is a license, that Intel license. They took a license in 2011. $6.8 million. It gives them worldwide rights, all device sizes to do everything and anything they want to do. That license, we -- we're a premier of one product --

THE COURT: Counsel, your time has expired. Finish -- finish up.

MR. JACOBS: Thank you, Your Honor.

We're talking about one product here. We're going to have a damages expert, Dr. Stephen Becker, and he will explain why that $6.8 million license would actually be a ceiling if you were to ever get to the damages issue.

Thank you very much, ladies and gentlemen.

THE COURT: All right. Ladies and gentlemen, you've now heard opening statements from counsel for both Plaintiff and Defendants.

Before we proceed with Plaintiff calling their first witness, we're going to take a short recess. This is one of those times when I'm going to tell you that it's all right for you just to simply close and leave your notebooks

in your chairs. I expect to have you back in here shortly. And as I say, we'll continue with the beginning of Plaintiff's case-in-chief when they call their first witness.

During this recess, follow all my other instructions. Don't discuss the case among yourselves. And we'll be back in here shortly. With those instructions, you're excused for a short recess.

COURT SECURITY OFFICER: All rise for the jury.

(Jury out.)

THE COURT: I want to see Mr. Sheasby and Mr. Bunt and Mr. Jacobs and Ms. Smith in chambers.

We stand in recess.

COURT SECURITY OFFICER: All rise.

(Recess.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

All right. Is Plaintiff prepared to call their first witness?

MR. SHEASBY: We are, Your Honor.

THE COURT: Is there anything I need to take up outside the presence of the jury before we bring the jury back in?

MR. SHEASBY: Nothing for the Plaintiffs, Your Honor.

MR. JACOBS: Nothing from the Defendants, Your Honor.

THE COURT: Let's bring the jury in, Mr. Elliott.

COURT SECURITY OFFICER: Rise for the jury.

(Jury in.)

THE COURT: Be seated, please.

Plaintiff, call your first witness.

MR. SHEASBY: Your Honor, Plaintiffs calls Jong-Ho Lee.

THE COURT: All right. Mr. Lee, if you'll come forward and be sworn.

(Witness sworn.)

THE COURT: Please have a seat.

As you can see, ladies and gentlemen, this witness will be testifying through an interpreter. The interpreter has previously been sworn by the Court.

All right. Counsel, you may proceed with your direct examination.

JONG-HO LEE, PLAINTIFF'S WITNESS, SWORN THROUGH THE INTERPRETER

DIRECT EXAMINATION

BY MR. SHEASBY:

Q. Good afternoon, Professor. Can you introduce yourself?

A. (In English.) Good afternoon. My name Jong-Ho Lee. I'm a professor at Seoul National University in Korea. I

apologize that I speak English with an accent. Because I am going to be speaking about technical subject, I have asked to have translate with my testimony.

THE COURT: Let me interrupt just a minute.

Counsel, approach the bench, please.

(Bench conference.)

THE COURT: Does either side wish to invoke the Rule?

MR. SHEASBY: Not Plaintiffs, Your Honor.

MR. JACOBS: We would like to invoke the Rule, Your Honor.

THE COURT: All right. Do you intend to invoke the Rule excluding expert witnesses?

MR. JACOBS: Not excluding experts, Your Honor. Fact witnesses.

THE COURT: I understand. You want the -- you want the expert witnesses to remain in the courtroom?

MR. JACOBS: That's okay, Your Honor, if it's okay with Plaintiffs.

THE COURT: Well, it's your invocation of the Rule. Just tell me how broad or how narrow you want it to be.

MR. JACOBS: We'd like them to stay -- the experts in the courtroom.

THE COURT: All right.

MR. BUNT: Your Honor, may I go tell Mr. Son he'll

have to leave. I'm not sure -- since the translator is not there, I'm not sure he'll understand it.

THE COURT: Yeah, I'll -- as soon as I give the instruction you may do that.

MR. BUNT: Thank you, Judge.

THE COURT: Okay.

MR. JACOBS: Thank you, Your Honor.

THE COURT: Thank you.

MR. BUNT: Thank you.

(Bench conference concluded.)

THE COURT: All right. The Rule has been invoked by counsel which means that if you are a fact witness in this case, you will have to remain outside the courtroom until you are called to testify. Expert witnesses are excluded from the Rules as invoked, but not fact witnesses. So unless you are a party representative or an expert witness, if you're going to testify in this case solely as a fact witness, you must remain outside the courtroom until you're called. And you should exit the courtroom at this time.

Let me ask for a point of clarification before we go any further, counsel. Does this witness intend to testify in English given the accent that he's exhibited and the presence of the interpreter, or is he going to testify in his primary language and the interpreter is going to

interpret his testimony?

MR. SHEASBY: Your Honor, Professor Lee will testify in Korean, he just wanted to apologize to the jury in English.

THE COURT: So we'll go forward in Korean?

MR. SHEASBY: Yes, Your Honor.

THE COURT: Okay. I just want to be clear.

All right. Let's proceed with the direct examination then.

Q. (By Mr. Sheasby) Professor Lee, why are you testifying today?

A. (Through interpreter.) I'm the named inventor of the patent that Samsung and the other Defendants in this case are accused of infringing.

Q. Can you turn to PX-1, and it's also on the screen? What is PX-1?

A. It is my '055 U.S. patent.

Q. Can you point out your name on the patent, please?

A. (Indicating.)

Q. Professor Lee, where do you live?

A. Seoul, Korea.

Q. Professor Lee, are you married?

A. Yes, I am, and I have two children.

Q. How old are they?

A. 23 and 20.

Q. Professor Lee, have you prepared some slides for your testimony today?
A. Yes, I have.
MR. SHEASBY: Mr. Negrete, can we put up the slides?
Q. (By Mr. Sheasby) Professor Lee, do you have an understanding of the Plaintiff in this case, KAIST IP US?
A. Yes. KAIST IP US is the U.S. subsidiary of a joint venture between KAIST, Korea Advanced Institute of Science & Technology, and P&IB, an organization that specializes in protecting the inventions of Korean professors.
Q. What is the Korea Advanced Institute of Science & Technology?
A. It is a non-profit research university in Korea.
Q. Does KAIST receive a portion of the results from this litigation?
A. Yes.
Q. Does P&IB receive a portion of the results from this litigation?
A. Yes.
Q. Do you know why there's an association with KAIST?
A. A government grant supported the research that led to the '055 patent, and KAIST University was the original lead organization on that grant, and I worked with a KAIST professor.

Q. Did you formally disclose your invention to KAIST?
A. Yes.
Q. And if you look at PX-2076, is this your disclosure in 2001?
A. Yes. This document is the formal disclosure and assignment to KAIST.
Q. Do you have a financial interest in the outcome of this case?
A. Yes. KAIST joint venture agreed that I will be receiving a significant portion of licensing fees and any judgments from this case.
Q. Why did you file a patent in the United States?
A. When I was working at MIT, I heard from people around me that the U.S. Government wanted new technology and inventions made in other parts of the world to be brought into the United States to benefit American companies. I kept this in mind when I came back to Korea to teach students.

THE COURT: Let me ask the interpreter to pull the microphone a little closer to you so that we can hear better.

Continue.

Q. (By Mr. Sheasby) Can you tell us about your professional background?
A. I have prepared a slide on this.

I am the director of the Inter-University Semiconductor Research Center in Korea, and I am a professor in the Department of Electrical Computer Engineering at Seoul National University. I'm also a fellow of the Institute of Electrical and Electronics Engineers. Less than 0.1 percent of IEEE members are selected as fellows. I have 95 patents, and I have received more than 20 awards. My students and I have published more than 600 research articles, and I have published more than 120 research articles on FinFET.

Q. Professor Lee, do you still teach students?

A. Yes, I do.

Q. How many graduate students do you train?

A. 23.

Q. And when you're not on sabbatical, do you still teach classes?

A. Yes, I do.

Q. Have you received any awards for the work that is specifically described in the '055 patent?

A. Yes. And I have prepared a slide on this.

In 2015, I received a national medal from the Republic of Korea, which is the highest technical award given by the government.

And in 2015, I received the Award of Excellence from Korean Academy of Engineering.

In Europe, only one professor of engineering under the age of 50 can receive this award.

And in 2006, I received the Award of Research Excellence from the National Research Foundation.

Lastly, in 2017, I received the Kyung-Ahm Foundation Award. This is the highest private award given to scientists in Korea.

Q. Do all of these awards relate to the bulk FinFET design in the '055 patent?

A. Yes.

Q. When did you create the inventions that are described in the '055 patent?

A. 2001.

Q. What inspired you to create the patent?

A. I have prepared a slide on this.

The Y axis is the transistor size, and the X axis is the year. As you can see, as time goes by, transistor sizes shrink.

Every two years, chip manufactures must find ways to shrink the size of their transistors in order to increase the speed of the chips and -- and in order to improve energy efficiency.

I believe that in the -- with the existing design as transistor sizes became smaller and smaller, the design would fail or become too expensive and impractical.

MR. SHEASBY: Your Honor, may the witness stand and use a physical demonstrative?

THE COURT: He may.

Q. (By Mr. Sheasby) What is the traditional transistor design that industry was using commercially at the time of your work?

A. First, this model has been magnified a million times. It is the planar transistor. And in a planar transistor, the current flows through a channel that is near the surface of the substrate.

In this design, as the size becomes smaller, it leads to too much leakage.

Q. Why did your design allow transistors to continue to shrink?

A. My design dramatically reduces leakage that was the reason for failure of the existing design. My design enabled higher speed, better energy efficiency, and was actually much more durable.

Q. How is your design different from the planar transistor?

A. Compared to the planar design, in my design, a Fin rises above the substrate and is connected to the substrate.

The Fin is wall-shaped, and the Fin is controlled from gates on opposing sides. This allows the Fin to be fully depleted through the shape alone leading to incredibly easy manufacturing.

Q. Did the shape of the Fin play a role in your invention?
A. Yes, because it's not as if you can just throw the pieces of the Fin together like Lego blocks. I discovered the importance of rounding the Fin top corners and also having the width of the Fin widen as it goes through the oxide layer.
Q. And to clarify, you discovered the importance of this in your design?
A. Correct.
Q. Did the shape of the -- before your research, were you aware of the Fowler-Nordheim effect?
A. Yes.
Q. Were you aware of any literature at the time saying that the Fowler-Nordheim effect was a problem with FinFETs?
A. No, at the time of my invention, the Fowler-Nordheim effect was not an area of interest or discussion in FinFETs.
Q. Was lowering the inference of the parasitic channel caused by the corner of the Fin something you and your colleagues were concerned about?
A. No.
Q. Did the design of the source and drain regions play a role in your invention?
A. In my invention, I teach about the source/drain junction depth, the importance of the source/drain junction depth, and having the gate and source/drain non-overlapping.

Q. How did you ensure or teach that you could ensure that the source and drain regions do not overlap with the gate?
A. By having spacers next to the gate, I could ensure non-overlap of the source/drain and gate.
Q. Did you have a view as to what would happen if you simply used the gate electrode as a mask for source/drain implantations?
A. If mass are used in ion implantation, definitely there will be overlapping of the source/drain and gate regions.
Q. You may sit down, Professor.
At the time of your work, were gate oxide layers made up of multiple materials known to you?
A. Yes.
Q. Does -- were you familiar with the concept of a High-k material?
A. Yes.
Q. Does your specification place any remnants on the composition of the gate oxide layer?
A. No, my patent specification allows for different materials to make up a gate oxide layer.
Q. Why didn't you use and why didn't you and Samsung use a High-k gate oxide layer in your original devices?
A. At the time of my research, we wanted to show that we can create an advanced performance transistor structure without using High-k.

Q. Are the components of a FinFET new or old?
A. The individual components of FET were known for a long time. What I did was as transistor sizes became smaller, I newly designed individual components and found new ways to combine these individual components in order to obtain break-through performance.
Q. Did you consider any other designs beside bulk FinFET?
A. During the time of my invention, there were a couple of alternatives. One of them was silicon-on-insulator.
Q. What is silicon-on-insulator?
A. There is an insulator layer in the substrate.
Q. Did you reach any conclusions regarding using silicon-on-insulator FinFETs instead your bulk FinFET?
A. I concluded that silicon-on-insulator FinFET would never be more than a niche because it was -- it was too expensive, and having an insulator layer in the substrate leads to an overheating problem.
Q. After you created the invention described in the '055 patent, what did you do?
A. I filed the Korean patent application, which is identical with the '055 patent, with the Korea Patent -- with the Korean Patent Office.
Q. Can you turn to PX-0332, and it will be on your screen, as well, Professor.
Is this the translation of your Korean patent

application?
A. Yes, it was filed in January 2002.
MR. SHEASBY: And, Mr. Negrete, can we expand that?
Q. (By Mr. Sheasby) How does the Korean patent application compare to the '055 patent?
A. They are substantially identical.
Q. While you were preparing your application, did you do anything else?
A. A colleague of mine asked me to train a graduate student on transistor design. And so I taught him how to make one of the bulk FinFET designs in my invention.
Q. When was the bulk FinFET transistor built with your student finished?
A. Approximately April 2002.
Q. Where was it created?
A. Seoul National University laboratory.
Q. The first working bulk FinFET was created at your laboratory; is that correct?
A. Correct.
Q. Did you publish any papers on your '055 patent bulk FinFET design?
A. Yes, many.
Q. Can you turn to PX-1304?
What is this document?
A. This is a paper of a simulation implementing the design

in my '055 patent invention.
Q. Can you turn to the second paragraph of the introduction section?
It says: In this paper, we propose a new body-tied FinFET.
Why did you call the device a body-tied FinFET?
A. Because the Fin body is connected to the substrate.
Q. Why do you call it an Omega device?
A. Because the outline of the body resembled the Greek letter Omega.
Q. Is the phrase "Omega body-tied FinFET" used in the field to describe your '055 patent design?
A. Yes.
Q. Now, can you turn to the last page of this document, it's PX-1304.
MR. SHEASBY: And I want to pull up the acknowledgment section.
Q. (By Mr. Sheasby) What was the source of the funding that led to the creation of the first body-tied bulk FinFET design?
A. It was the Korean government.
Q. Is Samsung listed?
A. No, it's not.
Q. How does this -- how does this -- let's turn to PX-1624 (sic). Do you recognize this document?

A. Yes. It is a paper published on the bulk FinFET, a working bulk FinFET that was made at the Seoul National University laboratory under my direction.
Q. How does this patent (sic) relate to the designs described in your patent?
THE INTERPRETER: Counsel, did you say patent or paper?
MR. SHEASBY: Yes. I'm so sorry.
Q. (By Mr. Sheasby) How does this design relate to the designs described in your patent?
A. This paper implements one of the designs of my '055 patent.
MR. SHEASBY: I want to turn to PX-1624 (sic), Page 5, Mr. Negrete, and I want to pull up Figure A.
Q. (By Mr. Sheasby) Can you describe what's being depicted in Figure A?
A. Figure A depicts a Fin that is connected to the substrate, and it becomes wider as it goes toward the substrate.
Q. Is the top rounded?
A. The top corners are rounded.
Q. So the original FinFET device that was made, the Fin was not rectangular. It widened as it went to the substrate and was rounded at top; is that correct?
A. Correct.

Q. In your patent, do you -- do you describe a technique called chamfering?
A. Yes.
Q. What is chamfering?
A. Chamfering is rounding the top corners of the Fin.
Q. In your patent, do you describe making the Fin wider as it approaches the substrate?
A. Yes.
Q. Did Samsung have any role in making -- strike that.

Did Samsung have any financial -- provide any financial support to the fabrication of the original bulk FinFET device?
A. No, it did not.

MR. SHEASBY: Can you turn to PX-624 (sic), Page 7, Mr. Negrete? And I'd like to look at the acknowledgement section again.
Q. (By Mr. Sheasby) What -- what is the acknowledged source of funding for the research that's described, the first bulk FinFET?
A. There are two, both are the Korean government.
Q. And the initials TP, that refers to Tai-Su Park?
A. Yes.
Q. Tai-Su Park was also a Samsung employee at the time, correct?
A. Although I paid a salary, he was a Samsung engineer sent

by Samsung to receive training at Seoul National University.
Q. But the reference to TP, what does that indicate as to the funding that he received?
A. The Korean government.
MR. SHEASBY: And let's go to the title, Mr. Negrete, just briefly.
Q. (By Mr. Sheasby) You once again use the word "body-tied Omega FinFET"?
A. Correct.
Q. And that is a phrase that is used in the industry to describe the '055 patent design?
A. Correct.
Q. What was the source of funding for the work in your laboratory that led to the '055 patent?
A. From the Korean government.
Q. Did Tai-Su Park report to Samsung about his work in your laboratory?
A. I believe that Tai-Su Park discussed the work in our lab with those at Samsung R&D group.
Q. What was your feelings about him doing that?
A. I was delighted that Samsung R&D group was interested in experimenting with my design.
Q. Did Tai-Su Park know that you had filed a patent application on your bulk FinFET design?
A. Yes, he did.

Q. How do you know this?
A. He cites my Korean patent application in a paper that he wrote.
MR. SHEASBY: So let's pull up PX-624.
Q. (By Mr. Sheasby) And that's Tai-Su Park's name on the first page; is that correct?
A. Correct.
MR. SHEASBY: And let's pull up the second -- the first full paragraph on the right-hand side.
Q. (By Mr. Sheasby) It says: In this work, we propose a new body-tied double-gate MOSFET built on -- built on bulk Si wafer. And it has a No. 4. What is No. 4?
A. 4 indicates a footnote in which he cites my Korean application, which is the same as the '055 patent.
Q. I now want to look at PX 671. Do you recognize this document?
A. Yes. This is the first of a series of papers co-authored with Samsung. And here Samsung makes a copy of my patented technology.
Q. The title is -- says Body-Tied Omega MOSFET; is that correct?
A. Correct.
Q. Is this the same as the title you use in your original papers?
A. Correct.

Q. I want to read you some language from the introduction in the second paragraph. It says: In this work, we propose a new body-tied FinFET. And then it goes on to say: Because the body shape resembles the Greek letter Omega, we call the device an Omega MOSFET. Do you know where this language is taken from?

A. Yes. It is essentially identical to the language that is used in my original simulation paper.

Q. Can we compare those two papers? So we're comparing PX-671, and that is the Samsung joint article; is that correct, Professor Lee?

A. Correct.

Q. And the article on your right, PX-1304, is your original paper; is that correct?

A. Correct.

Q. I want to turn to the acknowledgment section of PX-671.

And I want to ask you why Samsung is not listed as a source of funding in the joint article between your laboratory and Samsung.

THE COURT: Counsel, you're going to have to speak up yourself.

MR. SHEASBY: I'm sorry.

Q. (By Mr. Sheasby) I'd like you to turn to the acknowledgment section of the joint article PX-671, and ask you why isn't Samsung listed as a source of funding in the

joint article?
A. That is because Samsung did not provide funding for the research.
Q. If Samsung made the device for the second time, what did you do in these joint papers?
A. I did what the university was good at doing, providing advance simulation for the design of the transistors and for the transistors that have been made providing in-depth analysis.
Q. How does the design in this joint paper relate to your patent?
A. It is one of the designs covered in my '055 patent.
Q. I want to turn to the conclusion of this document. It states --
MR. SHEASBY: Let's pull that up, Mr. Negrete.
Q. (By Mr. Sheasby) It states: World's first body-tied FinFETs, Omega MOSFETs, on bulk Si wafer instead of SOI wafer were fabricated and their outstanding device characteristics were demonstrated.
Did you write that language, "world's first"?
A. No, it was written by either Tai-Su Park or someone at Samsung.
Q. What was your view of what Samsung was saying about your Omega body-tied FinFET device?
A. I was happy that they were copying my patent invention.

Q. How does -- was there anything different about the transistor manufacturing process that Samsung used?
A. They were doing a manufacturing process modification to the transistor that I had made, and it was a slight change to the manufacturing process, and it was not different -- much different from what was done at the university.
Q. Did it involve a nitrite layer?
A. Correct.
Q. Does your patent specification exclude the use of a nitrite liner?
A. No, it doesn't.
Q. Do you know if the nitrite liner used -- has been adopted by the industry as a manufacturing strategy?
A. It was adopted during the research and development phase, but it is not used in actual manufacture -- mass production.
Q. Who came up with the idea of the nitrite liner technique?
A. At Seoul National University in the process of making our design, Tai-Su Park, Professor Eui-Joon Yoon, and I came up with the idea of using a nitrite liner.
Q. After Tai-Su Park left your laboratory, did you continue to have contact with him?
A. Yes. We interacted multiple times. And recently he asked me for help on his career.

Q. Before this litigation commenced, has Tai-Su Park ever claimed to you that he had any role in contributing to the '055 patent?
A. Never.
Q. Did you interact with any Samsung executives regarding your bulk FinFET invention?
A. I interacted with Samsung R&D group senior executives, two were Dr. Kinam Kim and Dr. Donggun Park.
Q. What were your interactions with Kinam Kim?
A. I spoke about bulk -- bulk FinFET with him, I told him that I had filed a Korean patent, which is the same as the '055 patent, and I urged him to collaborate further in research, and I told him to license the technology.
Q. Can you turn to PX-2068?
Do you recognize this document?
A. This is an e-mail from Dr. Kinam Kim.
Q. I want to direct your attention to the language at the end. "As to the patent on double-gate that you are doing." Do you know what patent he was referring to?
A. This is referring to the Korean patent application which is the same as the '055 U.S. patent.
Q. I want to now look at PX-1378, and I want to direct your attention to the second -- third paragraph beginning after "doing my invention." First off, what is PX-1378?
A. This is an e-mail that I sent to Dr. Kinam Kim in

September 2002.
Q. And what do you -- when you say after doing -- after my doing various kinds of calculations and simulations, dot, dot, dot, it seems there's nothing better than body-tied double-gate in the future. What were you telling Kinam Kim?
A. I am telling him that body-tied double-gate, in other words, bulk FinFET, is an important future transistor design.
Q. Did Samsung ultimately decide to collaborate with you on your bulk FinFET design?
A. Yes, Samsung had decided to make my bulk FinFET design, and I was happy about that.
Q. Why did you collaborate with Samsung?
A. Because it was my belief that Samsung would become the commercial partner of my design.
Q. Did you discuss -- let me withdraw that.

Do you know what Kinam Kim is doing today?
A. He is the CEO and president of Samsung chip manufacturing. Samsung is the largest chip maker in the world.
Q. Did you have any interactions with any other Samsung executives?
A. Yes. I also interacted with a senior executive of Samsung R&D laboratory, Dr. Donggun Park.

MR. SHEASBY: Can you turn to PX-1374, Mr. Negrete?

Q. (By Mr. Sheasby) Do you recognize this document?
A. Yes. This is an e-mail from Dr. Donggun Park.
MR. SHEASBY: So let me correct the record. This is PX-1374. I greatly apologize.
Q. (By Mr. Sheasby) I want to direct your attention to the statement that begins: Body-tied FinFET is a structure that I myself thought about. And he goes on to say: I made no real progress. And then he goes on to say: I don't have any desire to dispute your position, Professor Lee, on your prior development.
What did you understand Donggun Park to be saying?
A. He is saying that he had thought about body-tied FinFET, which is the same as bulk FinFET. He thought that he had actually made no progress, and then he goes on to acknowledge that I first developed and invented bulk FinFET.
Q. After your joint publication -- let me ask you one other question.
Did anyone approach Samsung formally about taking a license to the '055 patent?
A. Yes. An agent that works with the university researchers negotiated with Samsung on my behalf in 2011, '12, 2015, and '17.
Q. After joint publications with Samsung, did your interactions with them on the bulk FinFET design stop?
A. No. Samsung continuously approached me to ask for my

assistance and guidance.

MR. SHEASBY: Let's pull up 1375.

Q. (By Mr. Sheasby) Do you recognize this document?

A. This is an e-mail from a Samsung engineer. He is asking for my bulk FinFET presentation material.

Q. And this is dated February 2006; is that correct?

A. Correct.

Q. And he states he's in charge of next generation products such as FinFET?

A. Correct.

Q. And can you turn to PX-899 -- PX-899, please?

Do you recognize this document?

A. This is the presentation that I sent to the Samsung researcher.

MR. SHEASBY: And can you turn to Page 7 of this document, Mr. Negrete?

Q. (By Mr. Sheasby) What is this page depicting?

A. This is explaining the general advantages of bulk FinFET over the alternative which is silicon-on-insulator FinFET.

Q. I'd now like to turn to PX-1608.

Do you recognize this document?

A. Yes. This is a presentation material that I used when I provided a lecture after being invited from those at Samsung Electronics in 2006.

Q. Do you know who attended this presentation?

A. Many engineers working on various chips at Samsung participated.
Q. All right. Can you turn to Page 18 of this document? What is on the left-hand side of this document?
A. This is the Fin that Samsung made copying my design.
Q. And what is the right --
A. Here.
Q. What is the right-hand side, Professor?
A. The right-hand side is the Fin that was made at our laboratory under my direction. The Fin is more advanced. It's taller and thinner, and the Fin body widens as it goes toward the substrate.
Q. And when you say made in your laboratory, what laboratory are you referring to?
A. Seoul National University laboratory.
Q. Did you -- did Samsung continue to approach you even after 2006?
A. Yes, they approached me after a large chip manufacturer in the United States, Intel, announced that they would be commercializing the bulk FinFET in 2011.
Q. Did you have any interactions with Intel?
A. Not directly, but through my agent, Intel took a license of my bulk FinFET technology in 2012.
Q. Did Samsung voluntarily license the technology, or was there a litigation?

THE INTERPRETER: Counsel, did you say Samsung?
Q. (By Mr. Sheasby) Excuse me.
Did Intel voluntarily license the technology or was there a litigation?
A. They voluntarily licensed. There was no litigation.
Q. Why did Samsung ask -- what did Samsung ask of you after Intel's announcement?
A. Samsung asked me to provide a multi-day lecture on bulk FinFET, and it -- they wanted the lecture to solely be on bulk FinFET.
Q. Who invited you to teach Samsung's engineers?
A. Dr. Dong-won Kim, an executive at Samsung R&D laboratory.
Q. And is PX-1377 his invitation?
A. Yes.
Q. By the way, do you happen to know the type of gate oxide that Intel uses on the -- its bulk FinFET that it took a license for from you?
A. I do know. They used Hafnium oxide with a silicon dioxide which makes up one gate oxide layer, and that is why Intel licensed my patent.
Q. And is it called -- is that gate oxide sometimes referred to as High-k?
A. Yes.
Q. Now, I want to turn to PX-1377 -- excuse me, PX-878 and

PX-879.

Do you recognize these documents?

A. Yes. This is the presentation material that I used when I taught Samsung engineer on bulk FinFET.

Q. In 2012?

A. Correct.

MR. SHEASBY: And I want to turn to PX-878, Page 62, Mr. Negrete.

Q. (By Mr. Sheasby) What is this showing?

A. This is showing passages from my '055 U.S. patent and the Korean counterpart, Korean patent application. And it is explaining that the Fin should widen as it goes toward the substrate. It's speaking about the importance of that. And also, it is showing techniques of chamfering, in other words, rounding the top corners of the Fin.

Q. Did Samsung ask you to give any other presentations after this one in 2012?

A. Yes, I was invited to lecture at the Samsung forum on 14-nanometer bulk FinFET design. Many Samsung executives and researchers participated in the Samsung forum.

Q. And is that -- is PX-856 the presentation you gave?

A. Yes, it is.

Q. And this was in 2012; is that correct?

A. Correct.

Q. Did Samsung ever provide you with research grants or

speaking fees?
A. Yes. When I lectured or spoke at seminars at Samsung, I was provided with a small speaking fee, but this is customary in Korea, and it was nothing above -- above the norm.

In addition, they asked me to help out with their RF circuit research. I provided that work and was paid for it.

Recently, I received a grant from a non-profit foundation in which Samsung supported the grant, and the Korean government oversees this foundation.

MR. SHEASBY: Can you turn to the first two pages of PX-732, please, Mr. Negrete, and we can just go to the second page?
Q. (By Mr. Sheasby) Is this an example of the government funding documents, the evidence -- your use of government support?
A. Yes, it is.
Q. I now want to -- I want to turn to PX-1197.

Do you recognize this document?
A. Yes. This is Samsung announcing in February of 2015 that it would be mass producing -- in other words, commercializing bulk FinFET.
Q. And I want to turn to a passage in that document. I believe it's on Page 2. It says: This groundbreaking

accomplishment is a result of Samsung's unparalleled R&D efforts in FinFET technology since the early 2000s, starting with the research article presented at IEDM, International Electron Device Meeting in 2003.

Do you have knowledge as to whether a bulk FinFET transistor paper was published in 2003 at the IEDM Conference that named Samsung as authors?

A. I am aware.

Q. Can you turn to PX-1302.

Is this the -- an IEDM paper from 2003?

A. Yes, it is.

Q. Do you recognize this document?

A. Yes. This is a 2003 IEDM paper that I wrote with Samsung. So this is a joint publication between Samsung and me in 2003. And a copy of my design, which is stated in my patent specification, is implemented here.

Q. So I want to do two things. First, can you examine static -- can you pull up the title? It says: Bulk FinFET Omega MOSFETs.

Do you see that, sir?

A. Yes, I see it.

Q. And is that the name that's used in the industry for your '055 patent design?

A. Yes.

Q. Who's the senior author on this article?

A. I am.
Q. So in 2015, Samsung issued a press release announcing the commercialization of bulk FinFET technology.
A. Yes. And the IEDM paper that Samsung points to in the press release is this paper.
Q. It's the paper on Omega bulk MOSFETs that you're the senior author on?
A. Correct.

MR. SHEASBY: Your Honor, that concludes Plaintiff's direct.

THE COURT: All right. You pass the witness, Mr. Sheasby?

MR. SHEASBY: I do, Your Honor.

THE COURT: All right. Ladies and gentlemen, before we proceed with the Defendants' cross-examination of the witness, we're going to take a short recess. If you'll simply leave your notebooks closed and in your chairs. Don't discuss the case among yourselves. Follow all the instructions I've given you. And we'll try to make this short, and we'll have you back in here quickly to return to the witness at hand and the cross-examination by the Defendants.

With that, the jury's excused for recess.

COURT SECURITY OFFICER: Rise for the jury.

(Jury out.)

THE COURT: Mr. Jacobs, are you going to cross-examine the witness?

MR. JACOBS: I am, Your Honor.

THE COURT: Are you going to need either of these demonstratives that are here?

MR. JACOBS: Yes, Your Honor, I am.

THE COURT: All right. Then we'll leave them there.

MR. JACOBS: Thank you.

THE COURT: We stand in recess.

Mr. Elliott, I need to see you in a moment.

COURT SECURITY OFFICER: Yes, sir.

(Recess.)

COURT SECURITY OFFICER: All rise.

THE COURT: Be seated, please.

All right. Let's bring in the jury, please.

COURT SECURITY OFFICER: Rise for the jury.

(Jury in.)

THE COURT: Welcome back, ladies and gentlemen. Please have a seat.

We'll continue with the examination of Professor Lee. The Defendants will now proceed to cross-examine.

Mr. Jacobs, you may proceed.

MR. JACOBS: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. JACOBS:
Q. Professor Lee, we haven't had the chance to meet. My name is Blair Jacobs. It's nice to meet you.
A. (In English.) Nice to meet you.
Q. Is it okay if I refer to you as Professor Lee during my investigation of you?
A. (Through translator.) Yes.
Q. Can I ask a favor of you, Professor Lee? I'm on a clock, and so it would be very much appreciated if you could keep your responses to a "yes" or a "no" to the extent that you possibly can. Can you agree to that?
A. Yes.
Q. Thank you, sir.
I want to start out by talking about honesty and fair play, okay?
A. Yes.
Q. You are a named inventor on several patents, aren't you?
A. Correct.
Q. You're proud of your work?
A. To a certain extent.
Q. Did you think your ideas were deserving of patents when you thought of them and filed patent applications?
A. Yes.
Q. So you submitted these ideas for patent application consideration because you believed they were new and novel

ideas, correct?
A. Correct.
Q. I want you to so suppose with me that in researching your ideas you learned that someone else had a similar idea a few years before and had obtained a patent on their idea, are you with me?
A. Yes.
Q. And you did some research, and you concluded that your idea was different than the prior similar idea that you had uncovered, okay?
A. Yes.
Q. You would feel comfortable submitting a patent application for your new idea because you believed it to be different than the prior similar idea that you had uncovered; isn't that true, sir?
A. Yes.
Q. And if your idea was, in fact, different, it would not be covered by that prior patent covering a similar but different idea, would it, sir?
A. I think so.
Q. As a professor, it is not unusual for you to be asked to give lectures outside of the university, is it?
A. I can't agree.
Q. Prior to filing the '055 patent, for example, you had been asked by third parties in the semiconductor industry to

give lectures on your research; isn't that true, sir?
A. Correct.
Q. In fact, prior to filing the '055 patent application, you had even given lectures for Samsung Electronics, hadn't you?
A. Correct.
Q. In fact, Samsung requested that you give lectures in 2000 and 2001 relating to fundamental device physics. Do you recall that?
A. Yes, I recall.
Q. So as a visiting lecturer, you had a relationship with Samsung at least as early as 2000; is that fair, sir?
A. Correct.
Q. And that was before you came up with the idea of the invention that you claimed in the '055 patent; isn't that true?
A. Correct.
Q. And, Professor Lee, you also are aware that Samsung invites other professors in to provide lectures within Samsung Electronics, correct?
A. I think so.
Q. And Samsung invites other professors to come in and give lectures to engineers relating to semiconductor technology; isn't that correct, sir?
A. That's what I heard.

Q. Professor Lee, you testified on direct examination that you know Dr. Tai-Su Park, correct?
A. Correct.
Q. He was a graduate student at Seoul National University when you first met; is that correct?
A. Correct.
Q. You were not Dr. Park's official advisor at Seoul National University, were you?
A. Correct.
Q. The official advisor assigned to Dr. Park was Professor Yoon; isn't that right?
A. Correct.
Q. Professor Lee, you testified about your invention a little bit during your direct examination. Do you remember that?
A. Yes.
Q. You are the named inventor on more than 20 patents in the United States. Does that sound correct to you, sir?
A. Correct.
Q. You understand that a patent contains two separate parts, a specification and claims. You understand that, don't you, sir?
A. Yes.
Q. And you also understand that it is the claims in a patent that define the scope of an invention, true?

A. Correct.
Q. Claims are like a deed of property, correct?
A. I don't know for sure.
Q. You do know that only the claims in a United States patent can be infringed, you know that, don't you, sir?
A. Correct.
Q. Now, Professor Lee, you have previously testified that you do not understand the scope of the subject matter covered by the claims of your '055 patent asserted in this case; isn't that right?
A. Correct.
Q. In fact, during the deposition that was taken of you, you testified that you were not in a position to say what is covered by the claims of your own '055 patent, right?
A. Correct.
Q. So to be clear, you are not in a position to provide testimony regarding the claims of your '055 patent, that's correct, isn't it?
A. Correct.
Q. There is another -- there's another two sets of binders in front of you, sir, and they should say cross-examination binders. If you could identify those and -- there -- they have tabs on them. If you could look for Tab DX-490, please.
Please let me know when you have found that,

Professor Lee.
A. Yes, I found it.
Q. DX-490 is a declaration for patent application in the United States Patent and Trademark Office; is that correct?
A. Correct.
Q. And if we look on the second page of this document, the signature block, that is your signature there on the inventor's signature line; is that correct, Professor Lee?
A. Correct.
Q. So this is the application that was filed in 2003 that eventually led to the issuance of your '055 patent; is that true?
A. Correct.
Q. Let's go back to the first page of this document, if we could, Professor Lee.
And you see -- you'll see that you certify on the first page that you are the original, first, and sole inventor of the subject matter which is claimed by the -- by the '055 patent. Do you see that? We've highlighted it on the screen.
A. Yes.
Q. Now, at your deposition, you told us that despite having certified this under oath, you could not provide information regarding the subject matter of the claims, right?
A. Correct.

Q. You testified that you signed this oath to the United States government under the instructions of my attorney. That's what you said at your deposition. Do you recall that testimony, Professor?
A. Yes.
Q. Now, separately in this document, Professor Lee, you certify that you reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. Do you see that?
A. Yes, I see it.
Q. And -- and to the extent that you were here certifying that you understood the content of the claims, the statement wasn't entirely correct because you do not understand the content of your claims, that's correct, isn't it, sir?
A. It's difficult for me to agree to that.
Q. Sir, you have your deposition. It's going to be at the first tab of your binder. You're going to actually have a copy of your deposition transcript in there.

If you could refer to the January 19, 2018 version of that. And I'm going to direct your attention, Professor Lee, to Page 98 of the transcript.

And Page 98 starting at Line 11 to Page 99, Line 15, if you could review that to yourself, please, sir.
A. Up to where in Page 99?

Q. Sure. Starting -- starting on Page 98 on Page 11, and reading through Line 7 on Page 99.
A. Yes, I read -- I read it.
Q. So having read this, does that refresh your recollection regarding your testimony about this portion of the declaration for patent application, Professor Lee?
A. Yes.
Q. So I'm going to read to you the question and answer starting at Line 11 of Page 98, sir.

I think we can publish at this point in time this -- starting at Line 11.

You were asked in your deposition: Okay. I'm asking you -- strike that.

I'm going to ask you about the first sentence in the second paragraph, and that sentence states: I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims as amended by any amendment referred to above.

Do you see that?

And you answered starting at Line 19: Yes, I can see that. But it includes the word "claim," and regarding the part of the claim, I won't be able to talk about them (sic). But regarding the part about the specification, that's right.

Do you -- do you see that testimony, Professor Lee?

A. Yes.
Q. So when you signed this document -- in fact, you did not understand the claims, that's correct, sir, right?
MR. SHEASBY: Your Honor, I object, rule of completeness. I'd like the complete testimony passage that he's referring to be read into the record, including 99, 8 through 16.
MR. JACOBS: Your Honor, I was only asking about the claims. I don't think that the rule of completeness applies in that I was only asking the question about the claims.
THE COURT: I'll -- I'll overrule that. Counsel, you can cover that in your redirect.
MR. SHEASBY: Thank you, Your Honor.
THE COURT: Let's proceed with the cross-examination.
MR. JACOBS: Thank you, Your Honor.
Q. (By Mr. Jacobs) In any event, Professor Lee, you would agree that you cannot testify here today regarding your invention as defined by the claims of the '055 patent. You would agree with that, right?
A. Correct.
Q. So you are not in a position to testify that any product, including Samsung's product, would be covered by any claim of your '055 patent; that's true, isn't it, sir?

A. Correct.
Q. And similarly, you are not in a position testifying here today to provide testimony that the Intel technology that was licensed would have been covered by the claims of your '055 patent; that's true, isn't it, sir?
A. Correct.
Q. Professor Lee, you did not invent the first FinFET device, did you?
A. What do you mean by first FinFET device?
Q. You did not invent the first FinFET device, did you, Professor Lee?
A. I can only say that it is difficult to answer that question because I don't understand the meaning.
Q. Did you know that an individual by the name of Chenming Hu, a professor at Cal Berkley, first coined the term "FinFET device" in 1999? Were you aware of that, sir?
A. Yes.
Q. Turn with me, if you could, to DX-001 in your patent (sic), Professor Lee. That is -- that is the '055 patent. It's your patent, it's DX-001.

Look with me, if you could, at Figure 2B in your patent, sir.

Are you there?
A. Yes.
Q. So, sir, you describe what is shown here in your patent

at Figure 2B as a conventional FinFET structure; isn't that true?

A. Correct.

Q. I want to confirm a couple of other things about your patent with you while we're here, Professor Lee. The title of your patent is Double-Gate FinFET Device and Fabricating Method Thereof; is that correct, sir?

A. Correct.

Q. And if you'll turn to Column 1 of the patent with me starting at about Line 6, it's the very beginning of the background of the invention. It says there: The present invention relates to double-gate FinFET devices and fabricating methods thereof.

Am I reading that correctly?

A. Yes.

Q. And if you turn to Column 4 of your patent with me, please, Professor Lee. Starting under the summary of invention, Line 10 and 11 in your patent, Column 4, I wanted to confirm that your patent states: The object of the present invention is to provide a double-gate FinFET device.

Am I reading that correctly, sir?

A. Yes.

Q. And when we look at the claims, let's look at Column 12, please. At the beginning of the claim in what's known as the preamble it states: A double-gate FinFET device,

comprising.

Do you see that?

A. Yes.

Q. Now, if you recall, at your deposition, you told us that you used the double-gate name in the '055 patent because the double-gate is the most important characteristic of your alleged invention; isn't that true, sir?

A. Correct.

Q. Can you look at the abstract of your patent with me, Professor Lee? That's on the first page of the patent. It's on the right-hand side.

A. I see it.

Q. And I want to confirm that when we look to the last three sentences -- the last sentence here in the first paragraph, it says: More particularly, the invention relates to an electrically stable double-gate FinFET device and the method of fabrication in which the Fin active region of a bulk silicon substrate where device channel and the body are to be formed has a nano-size width and is connected to the substrate and is formed with the shape of a wall along the channel length direction.

That's -- that's what it says in the abstract, right?

A. Yes.

Q. And if we look at Column 1 of your patent, Line 13,

under the background of the invention, again, we see that you are describing the shape of a wall along the channel length direction when you're describing the present invention; is that correct, Professor Lee?

A. Correct.

Q. And if we look at Claim 1 in your patent, again, that is Column 12, I wanted to confirm that the second element of the patent is a Fin active region, which is a wall-shape; is that correct?

A. Yes.

Q. And you chose to use the word "wall-shape" when you were defining the scope of your invention? This is -- this is your word choice; is that correct, sir?

A. Yes.

Q. Now, sir, at your deposition, you were asked some questions about how you believe your technology was transferred to Samsung. Do you recall that?

A. Yes.

Q. And you testified that in your view, Dr. Park could have taken the material from the university into Samsung; is that correct?

A. Correct.

Q. And now, Professor Lee, we know that Dr. Park did not take your material from the university into Samsung. We know that, don't we?

A. That is difficult to confirm.
Q. In fact, you asked Dr. Park to take your technology to Samsung so that Samsung could assist you in fabricating and commercializing the device, isn't that what happened, Professor Lee?
A. I can't agree.
Q. You asked Dr. Park to take the technology to Samsung, and he actually reported to you on the going-on -- goings-on relating to your technology from time to time, didn't he?
A. It's difficult to agree to that.
Q. Sir, the deposition transcript in front of you, it is January 19th, 2018. If you could do me a favor and take a look at your transcript there. I'm going to direct your attention to Page 48, Lines 4 through 11, please. Can you do that for me?

Tell me when you're there, please, Professor Lee.

So you were asked in your deposition, Professor Lee, starting at Line 4: Okay.

MR. JACOBS: Can we pull this up, please, publish this?

Q. (By Mr. Jacobs) Okay. So you don't know whether Dr. Tai-Su Park fabricated the device in Samsung in 2002.

And you answered, starting at Line 7: That, I can't know exactly, but the technology of the invention was brought to Samsung. And as Dr. Park was my student, he

reported the goings-on at Samsung R&D from time to time. So I knew about that.

You see that testimony, Professor Lee? Do you see that testimony?

A. Yes, I see it.

Q. And you were under oath when you provided that deposition testimony; is that correct, sir?

A. Correct.

Q. And the answer you gave at that time, to the best of your knowledge, was an accurate answer, correct?

A. Correct.

Q. In fact, Professor Lee, you directly asked Samsung if you could carry out design activities for your research idea with Samsung's semiconductor group, didn't you?

A. Correct.

Q. In 2002, you told Samsung that Samsung should prepare the device for now on, didn't you, sir?

A. What do you mean? Can you explain again?

Q. Absolutely. The question that I was asking you was in 2002, you communicated to Samsung that Samsung should prepare the device, meaning your device, for now on. Didn't you tell them that, sir?

A. I don't remember.

Q. I'm going to direct your attention, if I could, please, sir, to DX-554 in your binder in front of you.

MR. JACOBS: If we could highlight the last sentence in the third paragraph, please, Mr. Barnes. Thank you.

Q. (By Mr. Jacobs) Now, Professor Lee, DX-554 is an e-mail that you sent to Vice President Kinam Kim in September of 2002, isn't it, sir?

A. Correct.

Q. And you see that at the end of the third paragraph, you wrote to Vice President Kim: I think Samsung should gradually prepare the device from now on which would -- which it will have to compete in the future.

Do you see that?

A. I see that.

Q. And -- and so you actually did express to Vice President Kim that Samsung should gradually prepare the device from now on.

Did I read that correctly, sir?

A. Yes.

Q. You also mentioned in this e-mail in the fourth paragraph that Samsung was -- was helping you through general manager Si-Young Choi at the time. Do you -- do you see that? Is that correct, Professor Lee?

A. Yes.

Q. And if we go to the next page, in August of 2002, you had reached out -- if we look at the -- the fifth

paragraph -- you had reached out to Vice President Kim and you had written to him: In the future, could we carry out these series of tasks with your department?

Is that what you -- is that what you wrote, Professor Lee?

A. Yes.

Q. Could you turn to DX-026 in your binder, please, sir?

Are you there, sir?

A. Yes.

Q. You testified earlier that you gave lectures at Samsung as early as in 2000 and 2001. Do you recall that?

A. Yes.

Q. In fact, you received financial compensation from Samsung for your lectures; that's true, isn't it, sir?

A. Yes.

Q. This DX-26 is titled 50-nanometer MOSFET with Floating Polysilicon Spacer. You are listed as one of the authors on this article, aren't you, sir?

A. Correct.

Q. This was published in the early 2000s when you were a professor at Wongwang University; is that correct?

A. Correct.

Q. And if you will look with me in the acknowledgement section, Professor Lee, on the bottom right-hand side, the document states that this work was supported in part by

Samsung Electronics Company Limited and Tera-Level Nanodevices Project of MOST; is that correct?
A. Correct.
THE COURT: Let me ask the interpreter to speak a little louder on the English. I hear the Korean, but I don't hear the English as loudly as I think we should hear it.
Let's continue.
MR. JACOBS: Thank you, Your Honor.
Q. (By Mr. Jacobs) So this work and this paper was supported by both Samsung and that's -- that is a government-sponsored program, the Tera-Level Nanodevice Project of MOST, that -- is that a government-sponsored program, Professor Lee?
A. Yes, it is the government.
Q. Professor Lee, why does the government in Korea sponsor university research relating to -- let's just say, for example, the technology that you are involved in? Do you know why the government sponsors such research, sir?
A. I think that they sponsor research in order to develop the country's technology and to educate students.
Q. So you said develop the country's technology. Would you agree with me that it benefits the government if a company such as Samsung or Hynix is recognized as being at the lead -- the cutting edge, the leading edge of technology

development?

MR. SHEASBY: Your Honor, I object.

THE COURT: What's your objection?

MR. SHEASBY: I think this gets into equitable issues.

THE COURT: What's your response, Mr. Jacobs?

MR. JACOBS: Your Honor, it goes to totality of the circumstances, willfulness, cooperation. The government is working jointly with Samsung in this particular instance.

THE COURT: I'll overrule this objection, but I remind counsel of the Court's previous instructions about the equitable versus legal issues.

MR. JACOBS: Thank you, Your Honor.

THE COURT: Let's proceed.

Q. (By Mr. Jacobs) You can answer that question, Professor Lee.

THE INTERPRETER: Can you please repeat the question?

Q. (By Mr. Jacobs) I can't recall the question.

THE COURT: Then let's move on.

Q. (By Mr. Jacobs) Let me just say this: Does it benefit the government, Professor Lee, if Samsung and Hynix and other Korean companies are recognized as being technology leaders?

A. That is possible.

Q. You testified that you conceived of this double-gate bulk FinFET idea in June of 2001 when you were employed as a professor at Wongwang University; is that correct?
A. Correct.
Q. And you asked Dr. Tai-Su Park to make the device in the end of 2001, and it was first made in March or April of 2002; is that correct?
A. Correct.
Q. Can I direct your attention to DX-401, please, Professor Lee?
THE COURT: Counsel, approach the bench, please.
(Bench conference.)
THE COURT: I'm a little concerned about the exchange we just had before the jury. I certainly don't think we need to highlight the existence of equitable issues that are outside their purview. I don't think we've done that, but I think if this kind of exchange continues, we may well.
To the extent, Mr. Sheasby, that you feel like a similar objection is -- just a minute.
(Open court.)
THE COURT: Did I hear something from the jury?
COURT SECURITY OFFICER: Restroom request.
THE COURT: All right. I'll excuse the jury for a short recess. Follow all my instructions. And we'll have

you back in here shortly to continue.

The jury's excused for recess.

COURT SECURITY OFFICER: Rise for the jury.

(Jury out.)

(Bench conference continued.)

THE COURT: Why don't you return to your places, counsel. We'll continue this discussion without the jury present.

MR. JACOBS: Thank you, Your Honor.

(Bench conference concluded.)

THE COURT: Be seated, please.

All right. Counsel, now that the jury's on recess, let's continue the discussion we were beginning at the bench.

As I said, I'm somewhat concerned if this type of exchange continues that we may raise a heightened awareness on the part of the jury about equitable issues that they may not, and in all likelihood won't, see in the verdict form. And I don't want to open the door to any confusion in that regard.

Mr. Sheasby, if you think a similar objection is necessary in the future, I certainly think you're entitled to make it, but the better practice would be for you to ask to approach the bench and present it to me at the bench outside of the jury's hearing.

I don't know how the last exchange with regard to an equitable issue resulted in counsel for the Defendants asking the witness what the government of Korea knew and how in the world this witness is supposed to know what the government of Korea knows or doesn't know. I don't have any earthly idea, but the Plaintiff didn't object to the speculative nature of the question.

I thought it was supposed to be a recitation of the previous question, but that was a very different question than the one that was previously asked, and the witness didn't recall.

Nonetheless, going forward, if there's an objection that relates to whether or not the issue raised is properly raisable before the jury, we need to handle that at the bench and not in the presence and hearing of the jury.

As I've told you previously, counsel, evidence that is equitable in nature only and goes only to equitable issues should not be presented in front of the jury. Evidence that touches on both equitable and issues that are appropriate for the jury is different and can be presented and raised before the jury.

There may be a fine line between those two, and if we're going to have continuing problems about where that line is, I'm happy to make those calls as we go forward, but I don't want to do it in front of the jury like we just did.

Everybody understand?

MR. SHEASBY: I understand, Your Honor.

MR. JACOBS: I understand, Your Honor. Thank you.

MR. SHEASBY: May I make one request?

THE COURT: What's that?

MR. SHEASBY: It's about one of the questions. I believe that you had overruled my objection as to the question that he asked, but the previous question was a speculative question, as well. Would Your Honor consider a curative instruction that the -- the Korean government is irrelevant to this case.

THE COURT: I don't think that what's happened, especially since you didn't object to the speculative nature of the question, is appropriate.

If you want to revisit that on redirect and get the witness to tell you whether he has knowledge of what the Korean government knows and doesn't know, I think the door is probably opened to that on redirect. But I don't think it warrants a specific instruction from the bench.

MR. SHEASBY: I understand, Your Honor, thank you.

THE COURT: All right. Mr. Elliott, why don't you check on the status of the jury. If they're ready, we need to get them back in here.

And while they're out, Mr. Jacobs, do you have any idea of the remaining length of time on your

cross-examination?

MR. JACOBS: I would imagine about an hour, hour and 10, Your Honor.

THE COURT: Well, I had hoped to get Professor Lee off the witness stand tonight. But I'm sure there's some redirect that will follow that, and that would put us here very late. So I'll just have to make a call as we go forward.

MR. SHEASBY: Your Honor, if I -- as of right now, the redirect is going to be very limited if that helps you.

THE COURT: Well, it's 6:15. An hour and 10 puts us at almost 7:30 this evening before we see what redirect there may or may not be. I'm not sure I'm prepared to keep the jury here that late the first day.

We will get a better and more efficient start to the trial tomorrow than we had today so that we're not in this same position tomorrow.

MR. SHEASBY: Your Honor, just one other notice in the spirit of you wanted me to disclose it. The next exhibit they're showing, I'm not even clear if it's -- I'm so sorry, Your Honor. I'm not even clear if it's admitted, and I also think that it goes directly to the same equitable issue I'm concerned about. It's -- it's a government funding contract.

THE COURT: Well, it's either a pre-admitted

exhibit or it's an appropriate demonstrative, but it should be one or the other.

MR. SHEASBY: Okay. You know what, Your Honor, I will -- I will withdraw it. I will deal with it if it comes up. Thank you.

THE COURT: All right.

COURT SECURITY OFFICER: Rise for the jury.

(Jury in.)

THE COURT: Please be seated, ladies and gentlemen.

All right. We'll continue with the cross-examination of Professor Lee by the Defendants.

You may proceed, Mr. Jacobs.

MR. JACOBS: Thank you, Your Honor.

Q. (By Mr. Jacobs) Professor Lee, DX-401 is an industry academy collaborative research and development proposal from June of 2006; is that correct?

A. Correct.

Q. Do you recall your former testimony that the device using your idea was first manufactured in March or April of 2002, Professor Lee?

A. Yes.

Q. Could you turn with me -- there are numbers on the bottom of the page -- to DX-401-0009, please, sir?

And the caption I'm looking at is C in the middle of that page, Major Research Achievements for 5 Years.

Do you -- do you see that, Professor Lee?
A. Yes.
Q. And the second entry, March of -- March 1, 2002 through April 30th, 2002, it lists a -- it lists a research product, 30-nanometer or less level design of CMOS devices.
Do you see that?
A. Yes, I see it.
Q. And the supporting organization in the right-hand column on this document is shown as Samsung Electronics, Inc.; is that right?
A. Correct.
Q. Can you turn with me, please, to DX-017 in your -- in your binder? DX-017 has the -- the title, Fabrication of Body-Tied FinFET Omega MOSFET Using Bulk Silicon Wafers.
Is this an article in which you are an author, Professor Lee?
A. Yes.
Q. And this article relates to FinFET devices; is that correct?
A. Correct.
Q. And is this article from June of 2003?
A. Correct.
Q. And if we look in the author line, there are several Samsung employees who are listed as being co-authors from the Samsung Semiconductor R&D Center; is that right?

A. Correct.
Q. Could you turn to DX-019 in your binder, please, sir?
DX-019, Professor Lee, is an article titled, PMOS Body-Tied FinFET Omega MOSFET Characteristics; is that correct?
A. Correct.
Q. And you are listed as the final author on this article; is that correct?
A. Correct.
Q. And the article relates to FinFET devices; is that correct?
A. Correct.
Q. And, again, there are several employees from the Samsung Semiconductor R&D Center who are listed as authors along with you on this article; is that fair?
A. Correct.
Q. You continued throughout the year 2003 to collaborate and co-author papers with Samsung employees relating to bulk FinFET technology, didn't you, sir?
A. Correct.
Q. Professor Lee, could you turn with me, please -- there's going to be a Tab 100 in your binder.
Are you there, sir?
A. Yes.
Q. You received funding for your research from the

government through the Ministry of Science and Technology, also known as MOST; is that correct, sir?
A. Correct.
Q. You wrote plans and submitted them to the government as part of this funding arrangement; is that true?
A. Correct.
Q. And was it your university that would receive the funding as part of this program, sir?
A. The university would manage the fund. We would carry out the research. And once we carry out the research, the fund would be provided.
Q. And you were the main researcher in charge of this particular project; is that correct, sir?
A. Correct.
Q. Could I direct your attention to the page bearing Bates numbers -- there are numbers on the right-hand bottom of the page. You will see one is KAIST 027401. And that is -- that is in Tab 101.
A. (In English.) Chapter -- Chapter 5?
Q. Yes. Thank you, sir. Chapter 5. Are you there?
A. (By interpreter.) Yes.
Q. The second paragraph here, Professor Lee, it says: The core technologies of the double-gate device using bulk substrate in our study have been developed and grasped in universities through multiple trial and errors for which

three domestic patent applications and five foreign patent applications have been submitted and transferred --

THE COURT: Just a minute, counsel.

MR. SHEASBY: I'm about --

THE COURT: Do you have an objection, counsel?

MR. SHEASBY: Yes.

THE COURT: Let me hear your objection.

MR. SHEASBY: This document is not in evidence, and he's publishing it to the jury by reading it -- the document. It's not a pre-admitted exhibit.

THE COURT: What's your response, Mr. Jacobs?

MR. JACOBS: This is cross-examination, Your Honor. I'm allowed to use documents not in evidence. I'm just going to ask him whether this fits with his recollection or not. He's already established he was the researcher in charge.

THE COURT: So you acknowledge this is not a pre-admitted exhibit?

MR. JACOBS: That is correct, Your Honor.

THE COURT: And it's not for purposes of impeachment?

MR. JACOBS: It is not for purposes of impeachment.

THE COURT: I'll sustain the objection.

Q. (By Mr. Jacobs) Professor Lee, please turn to DX-047 in your binder.

This is a presentation that you prepared titled Nano CMOS Development; is this correct, Professor Lee?
A. Correct.
Q. And you see in the bottom left-hand part of the -- the first slide, it says, Final Report, do you see that?
A. Yes.
Q. And this document is dated March 4, 2004; is that correct?
A. Correct.
Q. Will you turn with me to DX-047104, please?
Now, Professor Lee, this report is a report to the government on the status of your project; is that a fair -- fair summary of it?
A. Yes.
Q. And it would include your bulk FinFET technology, as well, true?
A. What tab is this in?
Q. I'm looking at -- just DX-047 as a whole. The -- the report to the government, the final report, the Nano CMOS Report.
THE COURT: Counsel, approach the bench.
(Bench conference.)
THE COURT: Tell me how a report to the government relates to anything but an equitable issue, Mr. Jacobs.
MR. JACOBS: Your Honor, it states in the document

that technology is being transferred to Samsung, that Samsung is being counted on, that Samsung is working hand-in-hand as part of --

THE COURT: You haven't talked about any of that. All you do is keep waving the -- the moniker of the Korean government in front of this jury.

MR. JACOBS: I'm going directly to those statements in the document, Your Honor.

THE COURT: Well, it's one thing to go directly to those statements. It's another thing to get to them after you have beat the jury over the head with the fact that the government is involved in all this. And that does not relate to a legal issue that this jury is going to be asked about.

I have some concern that you've taken the guidance I've given you and are pressing the envelope further than you should.

I'm going to instruct the jury to disregard references to the government itself. The -- the actual transfer of the technology that may be recited in a pre-admitted document may be appropriate, but I don't see any basis that -- that avoids bringing the equitable issues before this jury when you talk about the government's knowledge of funding.

MR. JACOBS: Can I just say, Your Honor, this is a

report that you provided not even indicating who the report went to?

THE COURT: I don't have a problem with the document used for an appropriate purpose, and if internally it has an indication of what you've told me about it -- something that would go to the willfulness issue, that's fine.

MR. JACOBS: Okay.

THE COURT: The problem is you're taking advantage of the document and using it for an improper purpose before you ever get to the proper purpose, and that's not appropriate.

MR. JACOBS: I was just trying to lay the foundation for it, Your Honor. I can generically describe it.

THE COURT: I have a feeling that the foundation is the real target and not what's laid after the foundation. At least that's the presumption or the feeling I'm developing having listened to this testimony.

MR. JACOBS: It's just what's within the document.

THE COURT: All right. I'm going to instruct the jury to disregard the references to the government, and I'm going to instruct you to focus on only the internal portions of any of these exhibits that directly relate to the willfulness issue.

MR. JACOBS: Of course.

THE COURT: And if I continue to feel like that the Defendants are taking advantage of the latitude I've given you to defend the willfulness issue, I will curtail your use of that kind of evidence further, all right?

MR. JACOBS: I understand, Your Honor.

THE COURT: All right.

MR. JACOBS: Thank you.

MR. SHEASBY: Thank you, Your Honor.

(Bench conference concluded.)

THE COURT: Ladies and gentlemen of the jury, I'm going to instruct you to disregard any references, questions, or testimony about what the Korean government knew or didn't know about Professor Lee's work or the work he was involved in.

The other questions that do not relate to what the knowledge or understanding or support of the Korean government was are appropriate, but those are not.

All right. Continue with your cross-examination.

MR. JACOBS: Thank you, Your Honor.

Q. (By Mr. Jacobs) Professor Lee, one of the issues that you raise at this point in time is the need to have companies to assist in further developing your work relating to the project you're working on. It's right here in the first bullet point; is that correct?

A. Are you referring to assistance or participation?
Q. Participation, Your Honor -- I'm sorry, participation, Professor.
A. In that case, correct.
Q. And in the last bullet point on the same page, you further indicate that there is a need to have private corporations participate in the project. Do you see this last bullet point here, same page, do you see that, sir?
A. Yes.
Q. So it's fair to say you needed assistance at this point in time, 2004, from corporate participation; is that fair to say?
A. In 2004, I see that in the Korean version it is different from how it reads in the English version. It says that the universities, by focusing on research, that it's difficult for the companies to do, a company's participation can be induced.
Q. Okay. And so -- and that's a fair -- that's a fair statement of where you were in your project in 2004; is that correct?
A. So the message here is that universities should help and assist in areas that companies cannot do.
Q. And also induce corporations to participate in the product -- project, right?
A. Yes, participation.

Q. Oh, thank you.

Can you please turn to DX-47.107? It will be 107.

And the bottom -- let me know when you're there, please, sir.

Are you there?

Okay. The bottom bullet point here on the bottom of this slide, this is a research -- regarding research objective and details. This states: In late April 2003, the project group director said that without corporate participation, only modeling would be possible, and all aspects of the project can be executed with corporate participation.

Do -- do you see that, Professor Lee?

A. Yes.

Q. So it's fair to say that you were trying to encourage corporate participation at this point in time in 2004 with regard to this project, right?

A. Correct.

THE COURT: All right. Before we go any further, this examination -- cross-examination and possible redirect, ladies and gentlemen, has some additional length to go.

I had hoped we could get this first witness on and off the witness stand today, but I'm not prepared to keep you as late as it's going to be required to do that.

So we're going to break for the day at this

juncture.

Mr. Jacobs will continue his cross-examination in the morning. Then when he's finished, if Mr. Sheasby has additional redirect, we'll take that up then.

I'm going to ask you to take your notebooks with you, leave them closed on the table in the jury room. I'm going to remind you to follow all the instructions I've given you, including not to discuss the case with anyone.

I promise you, when you get home this evening, unless you live alone, whoever is there, the first question they're going to ask when you walk through the door is it tell me what happened in federal court in Marshall today.

Don't even try to answer that question. Just blame it on me. That's part of what I get paid for. Tell them that very stern federal judge in Marshall told you not to discuss the case with anyone in any way. And after -- tell them after this trial is over and you're no longer a juror in this case, you'll have an opportunity to talk about your experience. But don't even try to answer that question because you're going to get that question, and like I say, unless you live alone.

Follow all my instructions, including that one. And travel safely. I'd like you back in the morning by around 8:15 so that we can start as close to 8:30 as possible.

With those instructions, travel safely, and we'll see you in the morning.

You're excused for the evening.

COURT SECURITY OFFICER: Rise for the jury.

(Jury out.)

THE COURT: All right. Be seated.

Counsel, we still have a few deposition designations that are disputed that need to be taken up tonight before we reconvene in the morning. We're going to take about a five or six-minute recess, and then I want to see counsel in chambers so that we can go over and resolve those issues, after which we will adjourn for the evening and start again in the morning.

The Court stands in recess.

COURT SECURITY OFFICER: All rise.

(Recess.)

CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of my ability.

/S/ Shelly Holmes — 6/11/18

SHELLY HOLMES, CSR, TCRR
OFFICIAL REPORTER
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